Implementing High School JROTC Career Academies

Lawrence M. Hanser
Abby E. Robyn

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Preface

In 1992, the U.S. Departments of Defense and Education joined together to create a new high school program aimed at encouraging at-risk youth to remain in school and graduate. The program is a marriage of the defense-sponsored Junior Reserve Officers Training Corps (JROTC) program and a comprehensive high school reform initiative referred to as career academies.

This report grew out of the sponsors' interest in tracking the implementation of the program as a way to improve it and with an eye toward expanding the program to additional sites. However, the intended audience for this report is not only the program's sponsors. It also speaks to those working in or interested in the field of educational reform, including researchers, school district administrators, teachers, parents, and business and community leaders.

This research was sponsored by the Director, Special Projects and Research, in the Office of the Under Secretary of Defense for Personnel and Readiness. It was conducted within the Forces and Resources Policy Center of RAND's National Defense Research Institute (NDRI). NDRI is a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies.

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Summary

In 1992, the U.S. Department of Defense (DoD) and the U.S. Department of Education (DoED) joined forces to implement an innovative vocational education program at nine high schools across the United States. Designed to keep dropout-prone students in school, this innovation, JROTC Career Academies, combines military training that the services have provided in high schools for many decades with special schools-within-schools that education policymakers more recently have used to target particular student populations that have not prospered under traditional coursework and school settings.

The JROTC Career Academy model contains the following components:

- Structure of a school within a school.
- Block scheduling of classes and students.
- Occupational focus.[1]
- Integrated academic and vocational curriculum.
- Common planning time for teachers.
- Reduced student-teacher ratio.
- Business partnerships.
- Integration of JROTC staff and curriculum.

In an examination of progress achieved during the first two years of implementation and operation, this study found that efforts to implement the JROTC Career Academy model had, in this relatively short period of time, resulted in positive fundamental structural changes, such as creating discrete classes and reducing student-teacher ratios. On the other hand, schools were less successful in changing their curricula and instructional focus. The JROTC Career Academies' effects on student achievement and behavior will be reported in a subsequent study.

[1]The JROTC Career Academies are specifically *not* military in their career focus. Rather, they include a variety of programs that focus on building trades (such as carpentry and masonry), electronics, computer technology, health, aviation, etc.

Background

The DoD and the DoED teamed up in 1992 in an experiment they hoped would help lower school dropout rates by offering students vocational education integrated with academic instruction and the training in responsibility, self-discipline, and leadership that employers find lacking in new entrants to the workforce and in which the military structure excels. Moreover, the plan was to meld all of these components into a nurturing environment. To fund the creation of schools-within-schools, known as Junior Reserve Officers' Training Corps (JROTC) Career Academies at nine urban high schools across the United States, the two departments together contributed over $3.5 million to support the first three years of implementation and operation. These academies were designed to expose a small subset of students at each high school to a career area such as health or business combined with a structured and disciplined military training program designed for high-school-age students.

For more than 75 years, the Pentagon has overseen JROTC programs at high schools throughout the United States. Run by each service, JROTC programs hire retired military personnel to instruct students on service-specific historical, technological, and geographical topics and to train students in self-discipline, leadership, courtesy, and citizenship. Patterned after military units, JROTC programs also instruct students in marching, drilling, and respect for authority. JROTC courses augment but do not supplant students' normal course loads and graduation requirements. Today, some 400,000 students are enrolled in more than 2,600 JROTC programs nationwide.

Career academies, however, are comparatively young, having sprung up in the late-1960s in an attempt to retain and motivate students who are at risk of dropping out. They aim to demonstrate the relevance of education by combining academic and vocational coursework, and to expose students to a wide range of occupational prospects within a specific career area. Academies operate as separate schools-within-schools, with students taking distinct course sequences taught in morning and afternoon blocks by teachers who have been dedicated to the academies. While many career academies fall short of that ideal, all have the same goal: to create an environment in which students disenchanted with traditional high schools can be motivated to graduate and learn job skills. Today, upwards of 470 career academies are located in schools across the country.[2]

[2]See listings in the Career Academy Support Network, http://casn.berkeley.edu/.

Purpose of Academies

The marriage between JROTC and career academies has linked programs with distinctly different cultures. JROTC programs are designed to attract motivated, enthusiastic students who show leadership potential. Their agendas focus on discipline, chain-of-command, and self-responsibility. Career academies, in contrast, single out students who are not achieving up to their potential, many of whom are not motivated by traditional coursework and are at risk of not completing high school. The academies strive to prevent dropouts by creating schools-within-schools that provide integrated academic and vocational training.

To its supporters, this marriage was one way to deal with new and competing conditions facing the military, American schools, and employers seeking more-responsible young people. In the early 1990s, educational reform rose to the top of the national agenda, and school-to-work programs gained popularity in both political and educational circles. At the same time, with U.S. troop strength on the decline in the wake of the end of the cold war, policymakers were looking for ways to lessen the impact of military downsizing and reduced defense contracts on the domestic economy. And with the end of the cold war, a growing portion of the general public expected to see peace dividends—in the way of more resources available for economic expansion, infrastructure, and social programs. These JROTC Career Academies, which used innovative instructional techniques and included retired military personnel to address a vexing educational problem, seemed to answer all of these demands.

As the program unfolded, however, DoD and DoED realized that they were operating in uncharted territory. Their collaboration was new. They were not sure how to measure the success of schools in implementing JROTC Career Academies, how to manage the program once the academies had been set up, or how to gauge the impact that the academies have had or will have on students.

Research Questions

In early 1992, DoD turned to RAND for help in the following three areas:

- Help the DoD and DoED inaugurate the JROTC Career Academies and establish them in selected schools.
- Evaluate the implementation of the JROTC Career Academies.
- Evaluate the effects of JROTC Career Academies on students' achievement and behaviors over time.

As a result, in 1993 RAND began to help the DoD and DoED establish the program in partnership with local school districts in Buffalo, NY; Charlotte, NC; Dayton, OH; Indianapolis, IN; Los Angeles, CA (the site of two academies); Louisville, KY; Philadelphia, PA; and Washington, D.C. As part of this process, RAND held a kick-off conference for the participants in early 1993 and conducted summer workshops on implementation issues in 1994, 1995, and 1996.

RAND's assessments of the implementation began in 1993 and lasted through 1995. Its evaluation of the impact of the JROTC Career Academies on student achievement and behavior began in 1996 and will be reported in a companion study.

Methodology

RAND researchers employed multiple replicated case studies to conduct this research. This method, which treated every school as a separate but similar case study, involved two sets of extensive interviews at each site, the first in the spring of 1994 and the second in the spring of 1995.

Two pairs of researchers conducted the site visits. They interviewed district and school administrators, Career Academy coordinators, and all academy teachers either individually or in focus group sessions, using the same structured interview guides at each site. They also conducted group interviews with random samples of Career Academy students, and, in some cases, with select parents. They observed classes and other activities at each Career Academy. They also obtained supporting information from federal and local program documents.

Researchers synthesized the comments of interviewees and focus group participants, looking for common themes and issues across sites. Researchers also analyzed federal documents and held discussions with DoD and DoED administrators to characterize the larger national context in which the program was conceived, defined, and communicated to the participating schools.

Findings

The schools had mixed success implementing the JROTC Career Academy program during the first two years of its existence. They made the greatest progress during the first year on establishing a school within a school, scheduling common planning time, and reducing student-teacher ratios. They had the least success establishing a business advisory board to guide academy planning,

defining the objectives of the occupational focus and the sequence of courses and activities to support their objectives, and developing an integrated curriculum. By the end of the second year, all but one school had made substantial progress in implementing additional program elements, particularly in developing some integrated curricula and developing relationships with business partners.

Overall, the schools succeeded in making some of the structural changes that the fully implemented JROTC Career Academy model required—establishing the program as discrete units within the host schools, creating block schedules for teachers and students, allotting planning time for academy staff and teachers, and organizing meetings with outside advisory boards. However, the schools were less successful in changing instructional practices—defining an occupational focus for the academies, developing course sequences, integrating academic, vocational and JROTC instruction, and making innovative use of block schedules. But even with this mixed success, the marriage between JROTC and career academies represents a workable model. The early data suggest that the marriage becomes more stable as each partner recognizes the other's strengths and weaknesses.

The research identified three key factors that often worked in combination to affect successful implementation:

- ***Lack of formal agreements between all involved parties spelling out the program's goals and design.*** In their desire to implement the program quickly and to encourage responsiveness to local needs, the DoD and DoED did not enter into formal agreements with participating school districts soon enough, nor did districts enter into agreements with participating schools. As a result, the sponsors, districts, and schools often found themselves operating under different sets of goals and expectations. Moreover, the sponsors did not specify accountability measures to track implementation progress.
- ***Lack of committed and knowledgeable school leadership.*** Schools whose academy coordinators were knowledgeable about similar reforms and whose principals supported the academy operation were more likely to successfully design the academy program, implement adequate staff development, select appropriate students, and use resources wisely than schools that lacked such high-level commitment and expertise.

  Commitment alone was not enough. In several sites, retired military professionals charged with leading the program brought exceptional qualities of leadership, commitment, and perseverance to the job. But they lacked familiarity with the local educational system. At other sites that

started out with committed leadership, continuity was a problem—new principals or administrators were brought in during the second year of the program who had less enthusiasm for or knowledge of JROTC Career Academies.

- ***Local pressures.*** Budgetary cutbacks, and/or concerns regarding use of federal resources slowed the assembling of academy staff, program development, recruitment of students, and acquisition of program equipment. Competing reforms frequently reshaped the academy program.

How much implementation needs to take place before the program is judged to be a success? This research suggests that full implementation of the JROTC Career Academy program may not need to take place for it to show results. While it is early in the program's life, forthcoming analyses of student achievement and attendance data indicate that many aspects of student performance may improve even if changes in instructional practice have yet to come about.

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Curtis Gilroy, in the Office of the Under Secretary of Defense for Personnel and Readiness, together with Alan Ginsburg, in the Office of Policy and Evaluation Services, Department of Education, developed the concept of JROTC Career Academies and obtained top-level support for it from two administrations. Curt Gilroy's patience with and understanding of educators and educational research ensured that the JROTC Career Academies were provided resources to develop.

Marilyn Raby, from the California Partnership Academies, graciously met with us on many occasions and attended several of our JROTC Career Academy Conferences to help our schools' representatives understand career academies. If the career academy movement has a soul, she is it. Natalie Allen, president of Philadelphia High School Academies Incorporated, and several of her colleagues also contributed their time to help get the JROTC Career Academies started on the right foot.

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Cathy Stasz and Susan Bodilly (also at RAND) reviewed the original drafts, and their many critical comments and suggestions were responsible for helping us ultimately to tell the story of JROTC Career Academies cogently.

The authors bear responsibility for any errors that remain in the manuscript.

1. Introduction

The U.S. Departments of Defense (DoD) and Education (DoED) introduced Junior Reserve Officers Training Corps (JROTC) Career Academies in 1992 to nine urban high schools across the United States. This was the first time that DoD's long-standing high school JROTC program had been linked with the career academy concept, an innovative high school program operating at that time in approximately 150 schools nationwide. In comparison, JROTC programs today are in place in over 2,600 high schools nationwide, with an enrollment of about 400,000 students. JROTC Career Academies follow a traditional career academy model with the single addition of an integrated JROTC component.

The JROTC Career Academies—schools-within-schools that offer a focused course of study simultaneously training students in an occupational field and preparing them for college (Stern, Raby, and Dayton, 1992)—were an attempt to capitalize both on military expertise in discipline, training, and leadership from the JROTC program and on the career academy concept that is designed to keep at-risk students in school.

RAND was asked by DoD in the spring of 1992 to assist in implementing the academies and to evaluate their effectiveness in increasing positive student attitudes toward school and work and fostering positive student behaviors while in school.

DoD gave RAND three tasks as part of the implementation and evaluation process:

1. Help DoD and DoED inaugurate and set up the JROTC Career Academy program in the selected schools.
2. Evaluate the implementation of JROTC Career Academies to assist DoD and DoED in managing early expansion of the program and to provide feedback to the schools. Determine[1]
   - the status of implementation at each site
   - local contextual factors that were most important in facilitating or hindering rapid progress toward full implementation

[1]These goals for evaluating the implementation are consistent with Mazmanian and Sabatier's perspective from the "center," i.e., the perspective of the initial policymaker (1989, p. 12).

- actions that sponsors could take to foster local implementation efforts and to ease the expansion of the program to other sites.

3. Evaluate the effects of JROTC Career Academies on students' attitudes and behaviors over time. Determine whether students who were enrolled in a JROTC Career Academy had more positive attitudes toward school and work, better attendance records, better grades, and lower rates of getting in trouble than similar students not enrolled in a JROTC Career Academy, and students enrolled only in JROTC.

This study addresses the second task—the evaluation of the implementation. It documents the history and development of the JROTC Career Academies. It evaluates the success the schools had in meeting the sponsors' initial goals for program implementation. And it investigates factors important for successful implementation.

A forthcoming companion study will address the third task and provide evaluations of the effects that the academies have had on student attitudes and behavior.

Case Study Approach

The goals of our research and the nature of the phenomena we were examining led us to choose a multiple replicated case study approach (Yin, 1994). Our primary data sources were interviews with administrators, faculty, staff, and students at each site where the initial JROTC Career Academies were established. We also examined official government and local program documents.

Limitations of the Study

Our evaluation is limited to the period from program start-up in 1992 through the end of two years of program operation in the schools in 1995. The implementation literature (e.g., Mazmanian and Sabatier, 1989; Kirst and Jung, 1982) makes it clear that evaluations conducted in the early years of program implementation may differ significantly from later observations of program operation. Programs and schools continue to change as they adapt to local conditions.

Also, the schools in which the program was implemented, while perhaps representative of large comprehensive high schools in urban centers, are distinctly not representative of high schools nationwide. Our observations

would likely be quite different in many respects if the schools instead had been in rural or suburban locations.

Organization of the Report

Section 2 is an overview of the history of the JROTC Career Academy program and the circumstances surrounding its beginning. Section 3 describes the solicitation and selection of candidate districts. Section 4 details the conceptual framework for our formative evaluation and describes our research strategy and design. Section 5 describes the status of implementation after the first two years of operation and discusses the schools' accomplishments and the schools' implementation difficulties in that time period. Section 6 outlines the factors that affected implementation, and Section 7 presents the conclusions we drew from this work and the recommendations we have for the program's sponsors and others wishing to implement similar programs. Appendix A profiles the participating districts and schools, and Appendix B details the implementation progress by component and year.

2. JROTC and Career Academies

The end of the cold war was a signal to some members of the administration and Congress to divert defense resources to address some of the domestic concerns facing the nation. Indeed, the DoD was asked to develop and implement programs in such areas as education, health care, and juvenile justice. Such was the environment in which the JROTC Career Academy program was conceived by the DoD in concert with the DoED. In the spring of 1992, the administration directed DoD and DoED to initiate it.

In establishing a program that relies on JROTC and career academies, the DoD and DoED turned to educational concepts that were well established. Started in 1916, the JROTC today serves some 400,000 students in 2,600 schools across the country. Career academies began in the late 1960s and at the program inception had enrollments of perhaps 70,000 students at more than 470 U.S. schools. However, the two concepts are quite different in the way they operate, the students they serve, and the outcomes they seek.

Junior Reserve Officers' Training Corps

JROTC is currently authorized under Title 10 USC 2031:

> [T]he Secretary of each military department shall establish and maintain a Junior Reserve Officers' Training Corps, organized into units, at public and private secondary educational institutions which apply for a unit and meet the standards and criteria prescribed pursuant to this section.

According to Title 10, the purpose of JROTC is "to instill in students in United States secondary educational institutions the values of citizenship, service to the United States, and personal responsibility and a sense of accomplishment." DoD directive 1205.13 lists another objective: Develop in students an interest in military service as a career.

JROTC entails three distinct programs run cooperatively by the Departments of the Army, Navy, and Air Force. Each military service has its own organization for developing and overseeing its JROTC programs, and each has a distinctive four-year JROTC curriculum.

A school that wishes to establish a JROTC program must apply to one of the military services (i.e., Army, Navy, or Air Force) for approval. According to a

Navy evaluation (Bailey et al., 1992) of the benefits of NJROTC programs, host schools perceive a positive benefit to the school overall, a very positive benefit to cadets, and a positive benefit to cadets' academic performance. Written feedback from a host school survey indicates that host schools perceive the program

> to play a vital role in the communities and schools that host a NJROTC unit. The program provides a place to belong, to grow, to develop and to achieve. The cadets learn how to be an effective leader, as well as a follower; how to help others; and how to make a contribution to their community and school. . . . For some cadets the NJROTC program is the one place where they can find support, help and someone who cares. For others, the NJROTC program provides a positive alternative to belonging to gangs, a hope for the future and a reason to stay in school (Bailey et al., 1992, p. 33).

When a JROTC program is first established, the school is authorized to hire and staff its program with two retired military personnel. As the total number of students enrolled in the program grows, the number of authorized retired military personnel climbs. JROTC classes (one period per day, usually referred to as leadership, education, and training (LET) 1, LET 2, or naval science 1, etc.) are taught by uniformed retired military personnel who are hired by, and become employees of, the sponsoring school district. Like other teachers in their school, JROTC instructors report to the school principal as their supervisor. Not all retired military personnel are eligible to become JROTC instructors—each military service certifies those retired personnel it considers qualified. Minimum qualifications typically include an unblemished service record and experience as a military instructor.

Instructors receive, as a minimum, the equivalent of their prior active duty pay. One-half comes from military retirement benefits, one-quarter is paid by the school district, and the remaining one-quarter is reimbursed to the school district by the sponsoring military department. Thus, one motivation behind a school and district having a JROTC program is to obtain additional adult staff at a fraction of their real cost.

Students in JROTC classes receive instruction on historical and geographical themes specific to the sponsoring military department (e.g., the Naval program seeks to develop in students an interest in the oceans and how they affect world affairs,[1] and the Air Force program includes instruction on the principles of flight). In addition, all JROTC programs focus on providing students with skills and practice in self-discipline, leadership, and citizenship. JROTC programs are patterned after military units, with students assigned to various leadership roles.

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[1] *Naval Science 1*, Naval Institute Press, Annapolis, 1991.

As part of the program of instruction, all JROTC programs teach "drill and ceremony"—instruction and practice in marching, military courtesy (such as saluting of officers and referring to others respectfully), and following orders given by those with authority. Student officers guided by the retired military staff lead these activities. JROTC units usually field the school color guard (a team of marchers who present the flag of the United States at athletic events and other school activities) and often sponsor drill and marksmanship teams as after-school extracurricular activities.

JROTC represents an institutional culture that is in many ways distinct from the educational establishment in which it resides. Perhaps as an indication of how JROTC programs are viewed on high school campuses, they are often housed apart from the main school's academic programs, having offices and classrooms in the basement or in a separate building. Furthermore, the retired military personnel who staff JROTC programs may be seen as outsiders by their teacher colleagues with whom they share few common background experiences.

Career Academies

The career academy reform movement began in Philadelphia during the 1960s to encourage high school students to stay in school (see Neubauer, 1986). The movement fashioned several school reform ideas into an integrated whole. It was designed to address the needs of students "at risk" of dropping out of school who would lack the education and job skills needed for employment. Underlying the essential characteristics of academies is the theory that dropout rates can be reduced and student achievement increased if students are educated in a nurturing environment that makes clear to them that the value of education is in its relevance to their future life and career opportunities.

The core characteristics of the Philadelphia career academy model include the following components:

- **Structure of a School Within a School:** A team of teachers linked with a group of students forms a distinct unit within a school. The teachers remain with the student group throughout high school. These teachers are dedicated to the success of the student group and together plan curricula and activities that promote the academy's goals.

- **Block Scheduling of Classes and Students:**[2] Classes are scheduled consecutively and students move together from class to class. The block typically consumes either the entire morning or afternoon. Academy teachers decide how to use the block of class time. Block scheduling provides flexibility in class length, allowing classes to be scheduled, as needed, for more or less than one regular class period.
- **Common Planning Time for Teachers:** Academy teachers meet daily or weekly to develop curricula, plan activities, and share reports of student problems and progress.
- **Occupational Focus:** The academy curricula and activities focus on a specific occupational area. There is a sequence of courses and activities designed to acquaint students with the entire breadth of a career field and to provide work-related experiences in some portion of it.
- **Integrated Academic and Vocational Curriculum:** Topics and projects cross individual course lines—the curriculum is integrated thematically by the academy's occupational focus.
- **Reduced Student-Teacher Ratio:** Class sizes are small (typically 25 or fewer students), permitting greater attention for each student.
- **Business Partners:** Business partners assist in designing the academy program. They participate in setting goals, developing curricula, planning and hosting activities, providing workplace experiences, developing and renovating facilities, and providing classroom equipment. They may provide resources for the academy and identify and enlist other sources of support for the academy.

To this model, the JROTC Career Academies add the following component:

- **Integration with JROTC:** Enrollment in JROTC is required for students in the academy. JROTC personnel are integral members of the academy team, contributing to both planning and instructional processes. JROTC coursework is integrated with the academy program.

Like JROTC programs, career academies typically recruit students, rather than have them assigned to the program. In academies, students and their parents may be required to sign an agreement stipulating acceptable behaviors and

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[2]Block scheduling sometimes refers to a single class, such as algebra, that is scheduled for two back-to-back periods so that an entire year of instruction is completed in one semester. This is not the same as block scheduling in career academies, where students move together as a block from one class to another and where three or four different academy classes are scheduled back to back. In academy block-scheduling, the academy staff are free to divide and use the three-to-four-hour block of time in any configuration of subjects they desire.

performance if the student is to remain in the academy. Academy teachers also usually choose to participate in the program, although local customs or constraints (e.g., unionization) may define whether teachers are assigned or volunteer to participate. Finally, the career academy coordinator is usually a senior teacher who has been released from some teaching responsibilities to manage the academy.

The academy concept has broadened over time, and today the label "academy" refers to a wide range of programs. Variations include academies that may function like magnet programs, may target high-achieving students, may not operate as discrete units, or may include other modifications of the Philadelphia model. Our standard of reference, however, is the model founded in Philadelphia and extensively implemented in California.

Unfortunately, the sum total of the defining components of a career academy represents an ideal that is often not achieved (see Kemple and Rock, 1996). For example, scheduling constraints in the host school may mean that nonacademy students are mixed into academy classes. The school district may not have sufficient funds to provide academy teachers with an additional common planning period. State-required curriculum guidelines may limit the flexibility that teachers have to devote to the occupational focus of the academy. In short, any number of local factors can work to force a school to compromise in its implementation of a career academy.

Cuban's (1988) concepts of first- and second-order change may help to explain why the career academy model is often not fully implemented. Historically, first-order changes in schools have "succeeded while second-order changes were either adapted to fit what existed or sloughed off, allowing the system to remain essentially untouched" (Cuban, 1988, p. 343). First-order changes attempt "to make what already exists more efficient and effective, without disturbing the basic organizational features;" second-order changes "seek to alter the fundamental ways in which organizations are put together" (p. 342). Examples of second-order change include those that "alter existing authority, roles, and uses of time and space" (p. 342), and in this context, career academies represent a number of second-order changes.

Are there some kinds of second-order changes that are inherently more adaptable to local conditions than others and hence more easily implemented and more enduring? The results of our research suggest that a further categorization of second-order changes into those that are structural versus those that are changes in instructional practice may be useful. A component that requires structural change focuses on changing an aspect of a school's

organization. For example, instituting a common planning period requires a structural change in the way teachers are scheduled. Changing instructional practices focus on modifying what and how teachers teach. Hence, the requirement for career academies to have an integrated academic and vocational curriculum represents a change in instructional practice. Some career academy components include elements of change in both. For example, block scheduling requires (1) a back-to-back class schedule structure, and (2) using the blocked time for joining classes together, cross-curriculum projects, extended instruction, or for any other use the academy team finds advantageous for advancing the program.

As the JROTC Career Academies evolved, because of the variability found among them, we developed standards against which we could measure the extent of implementation of the career academy model in the JROTC Career Academies during their first two years. The components and minimum standards we set for each are shown in Table 2.1. The components that we judged to be structural, as opposed to instructional, are also noted in the table.

Comparing JROTC with Career Academies

Adding a JROTC component to career academies combines programs with distinctly different cultures. Implementation may encounter problems because staff bring to the program widely varying educational experience and varying expectations about the nature of the student to be recruited, students' academic responsibilities, or the content of instruction.

JROTC focuses on discipline, chain of command, and self-responsibility. JROTC recruiters seek motivated students with leadership potential who add to the prestige of the JROTC unit. While classroom curricula are combined with military drill, academic success accounts for only a portion of a student's JROTC grade. The military roots of JROTC's disciplinary focus also create a distinct challenge in combining JROTC with career academies into an effective high school program.

In contrast, career academies draw on three school reform initiatives:

- Dropout prevention—engaging students in school.
- School restructuring—establishing a school within a school.
- School-to-work transition—providing a career-oriented vocational course sequence and work-related experiences.

Table 2.1

Implementation Standards

Components	Standard of Minimum Implementation
School within a school	A discrete group of teachers and students are assigned to the academy.* A core of classes consists primarily of academy students and is taught by academy teachers.*
Block scheduling	At least two academy classes are scheduled back to back.* Blocked class time is used to advantage (e.g., occasional extended class periods; occasional joining of classes and instructors).
Occupational focus	A career area is defined. There is a defined sequence of core classes and work-related activities. There are defined goals for what students will know and be able to do upon graduation.
Integrated curriculum	Academic and vocational course curricula are integrated. Projects that cross course lines exist.
Common planning time	The majority of academy teachers have regular meetings, with a minimum of one per week.* Meetings are used for program planning (i.e., curricula planning, project development, etc.). Meetings are used for academy management and administration (i.e., student issues, budget, etc.).
Reduced student-teacher ratio	The academy has student-teacher ratios below that of the host school.*
Business partners	A business advisory council meets a minimum of twice per year.* Business representatives contribute to program development and planning.
Integration of JROTC	Enrollment in JROTC is required.* JROTC staff are represented in academy meetings.* JROTC coursework is integrated into the core program.

NOTE: * = structural element. Unmarked elements require changing instructional practices.

Career academy recruiters often seek students who are not achieving their potential, may have attendance or minor behavior problems, and are at risk of not completing high school. The structure and content of the academy is designed to promote the value of academic achievement and vocational skills.

However, both career academies and JROTC evoke a close knit unit that does not dissipate when the bell rings at the end of the period. In both programs, teachers are highly involved with students, typically spending time with them outside the classroom and in areas of life that extend beyond purely academic boundaries.

3. Inaugurating the JROTC Career Academies

Figure 3.1 is a timeline of major events in the development and implementation of the JROTC Career Academy program. On May 28, 1992, a White House press release announced a collaborative endeavor of DoD and DoED to establish a nationwide JROTC Career Academy program:

> New efforts to increase the use of Defense personnel and facilities to further education, job training and other community objectives. The Departments of Defense and Education will work with selected school districts, particularly urban districts with at-risk students, to establish career academies that offer enhanced technical training coordinated with a Junior ROTC program.[1]

The following month, then Secretary of Education Lamar Alexander wrote to Congressmen Natcher and Purcell and Senators Harkin and Specter with more details about the proposed JROTC Career Academy program:

> Using Talent from the Defense Sector
>
> Finally, we propose to use $10 million for educational activities designed to bring the talent of the defense sector to bear on education needs. These activities would be carried out under the Fund for Innovation in Education.
>
> We would use $4 million for a joint effort with the Defense Department in which the two agencies would form partnerships with local school districts to provide academic, vocational, leadership, and citizenship training to at-risk youth. DoD officials have pledged a similar contribution to fund their enhanced presence. Each of these programs would operate as a school-within-a-school, and would be more comprehensive than traditional Junior Reserve Officers' Training Corps (JROTC) programs. Both regular school year and summer programs would be available. Leadership and citizenship training would be emphasized through a traditional JROTC component, and technical training would be provided by staff using state-of-the-art technology.[2]

Draft plans circulated between DoD and DoED in the spring of 1992 initially referred to the academies as "America 2000 Academies," but a fact sheet later

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[1] *Defense Adjustment Assistance Fact Sheet*, Office of the Press Secretary, The White House, May 28, 1992.

[2] Letter dated June 4, 1992, from Secretary of Education Lamar Alexander to the Honorable William H. Natcher.

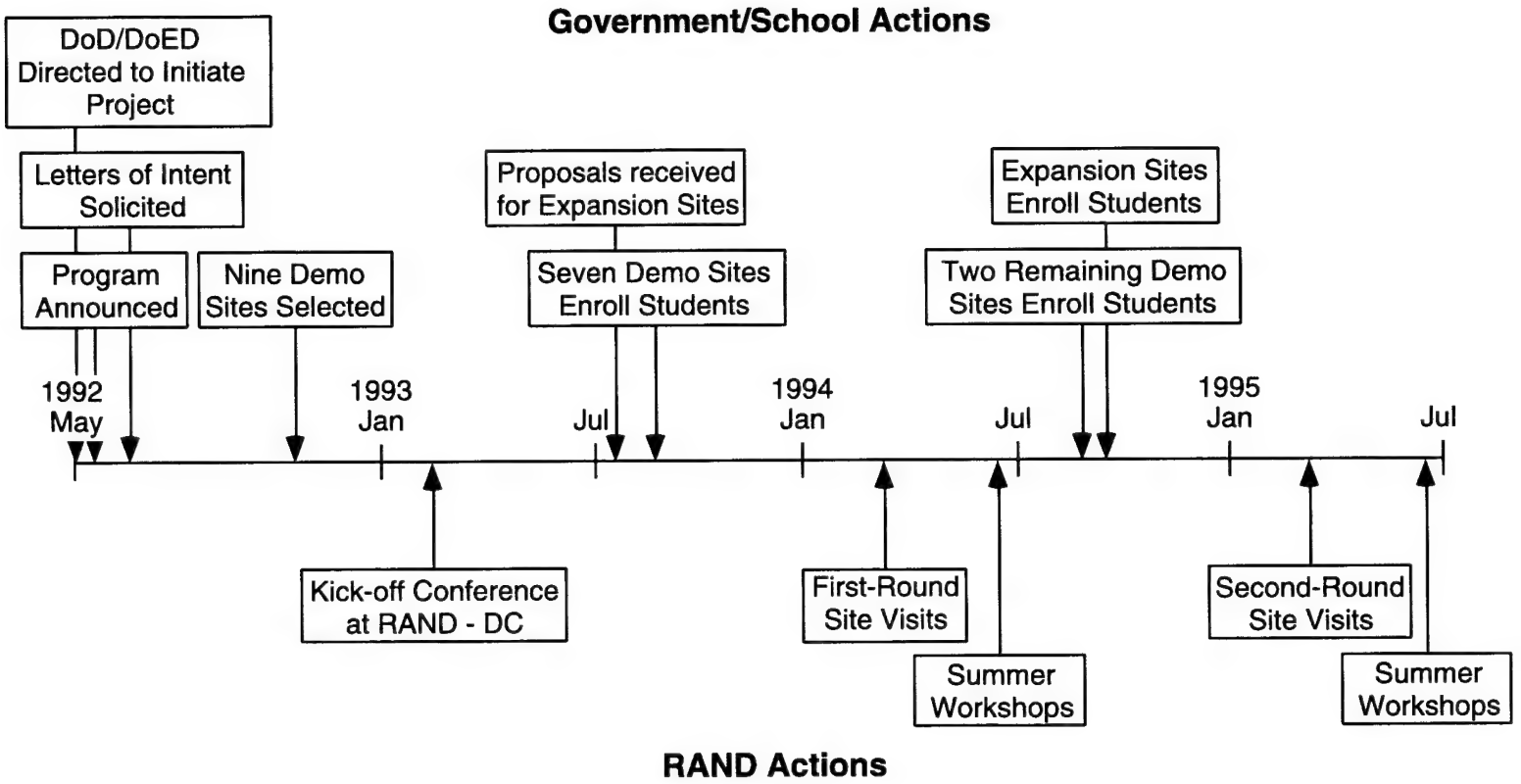

Figure 3.1—Timeline of Key Program Activities

provided to participating schools labeled it "A Federal and Local Partnership for Serving At-Risk Youth" and referred to the programs as "Career Academies." DoD/DoED program planning documents described the Career Academies as three-year school-within-a-school programs for students in grades 10–12. It further noted that the programs were to include[3]

- focus on a particular occupational or industry-specific theme
- support from a school/business partnership
- integration of a vocational-technical program with core academic subjects
- block-scheduling of students
- reduced teaching loads and lower student-teacher ratios to allow for specialized instructional and ancillary activities
- mentoring for 11th grade students
- full-time summer employment after 11th grade and half-time employment in the second semester of 12th grade.

These initiation and planning documents for JROTC Career Academies laid the framework for the structure and goals of the program, and served as the focal point for later discussions with district and school representatives.

School Selection

DoED's and DoD's first task was to identify candidate schools and to select those that would participate. They targeted 18 school districts that were

- urban districts
- with at-risk students
- in communities affected by military downsizing.

In July 1992, the Secretary of Education solicited letters of intent from each school district, stating whether they desired to participate in a career academy demonstration program. The districts were asked to nominate specific schools and to submit a preliminary program plan and budget.

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[3]The reader may recognize these as the essential elements of the career academy model developed in the 1960s in Philadelphia (Stern, Raby, and Dayton, 1992) and later embodied in the California Partnership Academies and elsewhere across the country.

The solicitation described the program as building upon JROTC and the "academy" career training program. The request called for "letters of intent" outlining "a model 'career academy' program." The "Fact Sheet" description of the program stated:

> "Career Academies" will focus on providing: (1) leadership training to develop students' confidence and sense of responsibility; (2) vocational and technical training to increase students' future employment opportunities; and (3) academic instruction to ensure that students graduate from high school and are equipped with necessary skills. [U.S. Department of Education: "A Federal and Local Partnership for Serving At-Risk Youth, Fact Sheet," July 1992.]

DoED asked districts to include the following information as part of their letters of intent:

- Background and purpose.
- Project design.
- Population to be served.
- Local resources.
- Community involvement.
- Budget request.

As part of their project design, districts were asked to

> outline a model "career academy" program that takes into account innovative strategies for meeting the needs of at-risk youth in your community. Include an emphasis on leadership and citizenship, academic instruction, and vocational/technical training. Describe the vocational/technical career specialties (if any) that the "career academy" will emphasize. ["Criteria for the Development of the Career Academies," U.S. Department of Education, July 1992.]

Letters of intent were received from eight school districts and were reviewed by representatives from DoD, DoED, and RAND during the fall of 1992. Officials at DoED decided that all districts indicating a desire to participate would be included. Districts later were asked to revise and clarify their plans, but no further proposals were required for acceptance into the program.

In the eight selected districts, 10 program sites were designated (Table 3.1). Charlotte split one program between a middle school (9th grade) and nearby high school (10th through 12th grades), and Los Angeles chose two high schools to each host a program. Selection of the sites was at each district's discretion, but all of the selected schools were characterized in the proposals as serving an at-

risk population. In addition, four were selected because the districts wanted to improve the schools' program and/or image in the community, and four were selected because they actively lobbied their district to host the academy program.

Table 3.1

Participating Districts and Program Sites

District	Program Sites
Buffalo, NY	Seneca Vocational High School
Charlotte, NC	Eastway Middle School / Garringer High School
Dayton, OH	Grace A. Greene Vocational Center
Indianapolis, IN	George Washington High School
Los Angeles, CA	Alain Locke High School / Hollywood High School
Louisville, KY	Shawnee High School
Philadelphia, PA	West Philadelphia High School
Washington, D.C.	Phelps Career High School

Although the program was targeted toward at-risk students, neither DoD nor DoED provided districts with a formal definition of at-risk students—districts were encouraged to use their own definition and to set criteria for student selection into the program. Most districts cited various indicators of educational and economic disadvantage in the host school that they associated with failure of students to graduate from high school—e.g., high minority populations, high dropout rates, low standardized test scores, large numbers of students receiving free or reduced cost lunches, high absentee rates, few students proceeding to postsecondary education, high in-grade retention rates, high suspension rates, and low grade point averages. Only three districts set specific criteria for student selection into the program.

Table 3.2 displays several characteristics that districts cited in their letters of intent to describe their designated schools. The information in Table 3.2 was drawn from the district letters of intent and supplemented by information gleaned from interviews conducted shortly after schools were selected and thus was current as of the spring of 1993. The arrows in the table (↑, ↓) indicate whether the school was higher or lower than the district average in that characteristic.

In general, most of the host schools were in worse educational condition than their district average. In half of the designated schools, dropout rates were 50–100 percent higher than the district average. Most schools had a higher percentage of students receiving free or reduced-price lunches. Nine of the ten schools also had higher percentages of minority students. Seneca Vocational High School was the lone exception. Although a higher percentage of students at

Table 3.2

District and School Characteristics (1993)

School	Free/Reduced-Price Lunch Percentage	Average Daily Attendance Percentage	Dropout Rate/ Year Percentage	Graduation Rate Percentage	Minority Percentage	Approximate Total School Enrollment
Seneca Vocational	66 ↑	88[a] ↑	3 ↓	96 ↑	57 ↓	752
Eastway Middle School	42 ↑	91	N/A	N/A	49 ↑	769
Garringer	22[b] ↓	93 ↑	15 ↑	91 ↓	64 ↑	1,335
Grace A. Greene[c]		43 ↓	13 ↑	N/A	76 ↑	103
George Washington	68 ↑	90 ↓	25 ↑	49[d] ↓	64 ↑	1,060
Locke	45 ↑	70–85	26 ↑	74 ↓	99 ↑	1,932
Hollywood		82	37 ↑	82 ↓	69[e]	2,400
Shawnee	42 ↑	87 ↓	8 ↑	95 ↑	46 ↑	914
West Philadelphia	All students ↑	65 ↓	40–50 ↑	30–35	100 ↑	1,848
Phelps		84 ↑	13 ↑	91	100 ↑	450

NOTE: ↓ = less than the district average; ↑ = greater than the district average.

[a]Information is for school year 1994–95.

[b]Information is for school year 1993–94.

[c]No information about Greene was supplied in the proposal because the district intended to assemble an entirely new student body at the site. Information in this table reflects the first year of academy operation (1993–94).

[d]This figure reflects the number of students who started the 9th grade and graduated the 12th grade. At the other schools, "graduation rate" refers to the number of 12th graders who graduate.

[e]Minority population does not include the 28 percent of non-English-speaking Armenian students.

Seneca received free or reduced-price lunches (reflecting a higher rate of economic disadvantage), all other factors indicated more positive conditions at Seneca than at the average high school in Buffalo.

An additional requirement for school participation was the existence of an ongoing and viable JROTC program at the school. Two schools, Grace A. Greene and Phelps Career High School, planned to meet this requirement by officially enrolling students in JROTC programs at nearby schools while awaiting establishment of their own programs. Students meanwhile were able to attend JROTC on their home campuses. Two other schools, Seneca Vocational High School and West Philadelphia High School, planned to delay starting their JROTC Career Academies for a year in order to establish JROTC programs.

A December 10, 1992, letter from the Department of Education accepted districts into the program and invited district and school representatives to a RAND-sponsored workshop in February 1993 in Washington, D.C. To assist districts with planning their implementation, the letter included a three-page enclosure describing in greater detail the program they were expected to implement, which was based on the Philadelphia model.

RAND researchers (accompanied by DoD and/or DoED representatives when feasible) visited each site[4] prior to the workshop to meet with district and school representatives, review district and school plans, and provide participants with a detailed description of the components of the JROTC Career Academy program based on the Philadelphia model, but with the addition of JROTC. After these meetings, districts revised their proposals and submitted them to the program sponsors. Brief descriptions of each district and school and their proposed JROTC Career Academy programs are included in Appendix A.

Seven schools enrolled their first class of JROTC Career Academy students for school year 1993–94, and three enrolled their first class for school year 1994–95 (one of these was Garringer High School, which received its first students transferring from Eastway Middle School). Table 3.3 provides JROTC Career Academy enrollment figures for the 1993–94 cohort and the 1994–95 cohort. By school year 1994–95, almost 6 percent of the students in these schools were enrolled in a JROTC Career Academy.

[4]These are not the site visits referred to in Section 3 that focused on evaluating the first year's implementation progress. These site visits were conducted after the school districts had agreed to participate but prior to implementation.

Table 3.3

Initial JROTC Career Academy Enrollments

School	School Year 1993–94	1994–95
Seneca Vocational		49
Eastway Middle School	50	44
Garringer		30
Grace A. Greene	112	114
George Washington	51	64
Locke	56	84
Hollywood	65	113
Shawnee	50	65
West Philadelphia		48
Phelps	34	33

4. Research Goals, Framework, and Design

The goals of RAND's evaluation of the implementation were to

- assess the status of implementation of the JROTC Career Academy at each school site
- identify the factors that were most important in facilitating or hindering implementation.

The JROTC Career Academy program was specifically begun with a limit of nine sites in order to learn from experience before opening additional sites. The sponsors' overall plan in proceeding with a phased implementation was to understand the factors that were affecting the attainment of objectives in the first sites, feed that information back to them to improve their continuing implementation efforts and apply those lessons in an additional round of implementation at other school sites.

Framework

The literature on evaluating policy implementation (e.g., Cuban, 1992; Fullan and Miles, 1992; Hall, 1992; Louis, 1994; Mazmanian and Sabatier, 1989; McCollum, 1994; McLaughlin, 1990; Miles, 1993; Pressman and Wildavsky, 1984; and Rossman, Corbett, and Firestone, 1988) provided the basis for choosing a broad analytical perspective. Four major variables that have important influences on implementation were identified:

- The design of the policy being implemented.
- The tractability of the problem being addressed by the policy.
- The local context in which the policy is to be implemented.
- The nature of the implementation process.

Researchers traditionally have adopted a top-down perspective in examining these variables. The basic premise underlying this perspective is a belief that desired policy outcomes will be attained if implementers correctly follow program guidelines, and if the theory underlying the policy is correct. The analytic focus is on the clarity of the policy issued by the policymaker, the

adequacy of the structure of the implementation process, the commitment and skill of implementing officials, and the support of interest groups.[1] If the policy is not implemented as intended, analysts look for flaws in how the program was designed and/or inadequate adherence to guidelines by implementers.

However, the top-down view has not been without criticism. Its focus on centralized decisionmaking can result in neglecting the effect of local factors in the implementation process. In the case of school reforms, these factors may include, for example, school culture, competing priorities, and economic and political circumstances. To circumvent the shortcomings of the top-down approach, a "bottom-up" approach has been developed and used by several implementation researchers (see Elmore, 1979; and Hjern and Hull, 1982). The major contrasting feature of the bottom-up approach is that it focuses first on understanding the local implementation context. Because this approach does not focus solely on the objectives of the policymaker, researchers are more likely to discover the effects of other actors and conditions on the implementation process.

A combination of top-down and bottom-up approaches was adopted for examining the implementation of the JROTC Career Academy program. This choice was made primarily because the strengths of the top-down approach better matched the sponsors' strategy for implementing this specific program. However, the flexibility offered to program implementers signaled the importance of considering the influence of local contextual variables as well, and elements of the bottom-up approach are suited to this task.

A model that depicts our view of the implementation framework for the JROTC Career Academy program is shown in Figure 4.1.[2] At its simplest level, Figure 4.1 reflects the top-down nature of the approach—i.e., the JROTC Career Academy program was designed and chosen by federal policymakers and handed-off to a number of schools to implement. It was not created through an extended dialog either with local school officials or other local stakeholders. However, the figure also highlights the important influence of local contextual variables on the process.

The multiplicity of variables that are important in a bottom-up perspective are encapsulated as "local contexts" for ease of rendering in the figure. The literature

[1]For more detailed discussion of this notion that policymakers learn from experience in implementing programs, see Angela Brown and Aaron Wildavsky, "Implementation as Exploration" pp. 232–256 in Pressman and Wildavsky (1984).

[2]For a more complex example of such a model see Mazmanian and Sabatier (1989), Figure 2.2, p. 40.

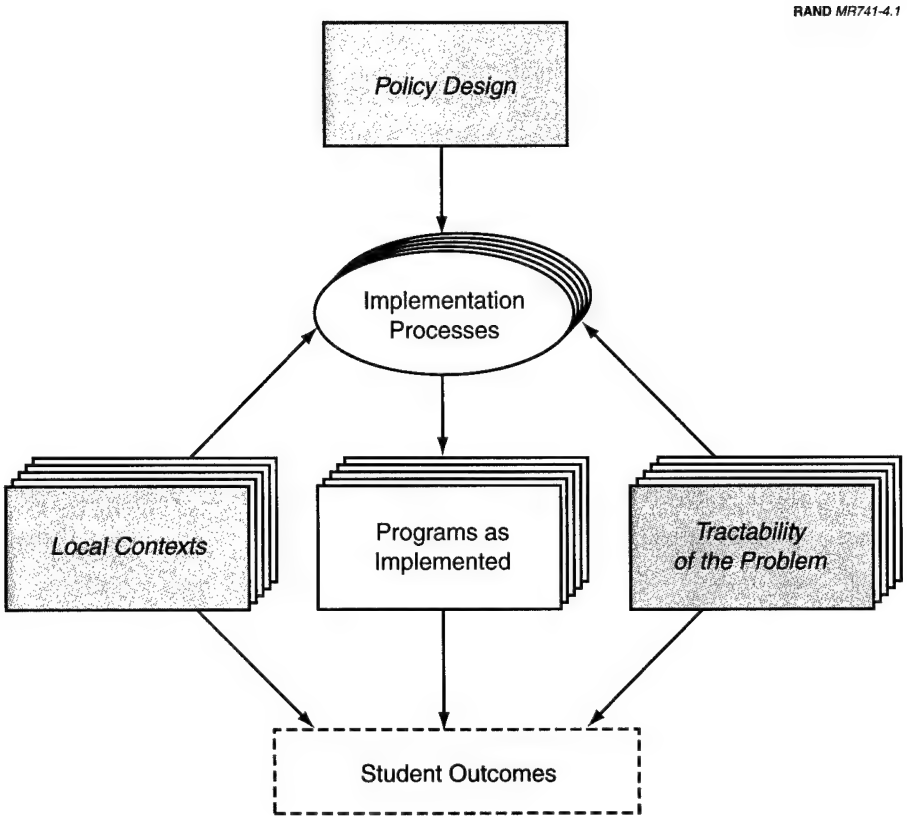

Figure 4.1—Influences on Implementation Outcomes

on school reform suggests a host of local context variables that are important to consider, including, among others: Program resources—are they adequate, timely, and accessible? The leadership of implementing officials—is it skilled in achieving change, and is it committed to this program? Past experience implementing school reform—are leaders knowledgeable about the changes needed to implement this program and experienced in bringing about these kind of changes? Staff continuity—will the program have continuity of leadership during its development? District support—is the district committed to facilitating program implementation and to sustaining the reform? Teacher unions—are rules and regulations amenable to structural reforms and changes in instructional practice? Parent and community relationships with the school—is the community prepared to be involved in supporting the program? Thus, the major local contextual variables we focused on were

- resources, including pressures on school and district budgets
- the presence of other concurrent reforms in the school and district

- district, school, and program leadership, including experience, support, and continuity
- experience with similar reforms.

To ensure that we did not overlook additional important local contextual variables, we interviewed a wide range of local actors, including district and school administrators and staff, teachers, parents, students, and local media representatives. A discussion of the full set of local context variables that were found to affect the implementation is included in Section 6.

In addition to local contextual variables, local implementation processes and the local decisions that support them also play an important role in implementation. These local processes and decisions are influenced by the local context in which they occur as well as by the actions of policymakers and by the nature of the reform itself. McDonnell and Grubb (1991) described "inducements" and "capacity building," among others, as instruments that policymakers can use to effect implementation. As McDonnell and Grubb noted (p. 12),

> The challenge for policymakers relying on inducements is to impose sufficient conditions on the receipt of funds to ensure that policy goals are not seriously thwarted without stifling the creativity and flexibility needed to produce high-quality outcomes.

For the JROTC Career Academy program, policymakers chose inducements to motivate compliance with the program design, while reserving maximum flexibility to the schools and districts. Funds flowed from the sponsors directly to schools and districts based upon a memorandum of understanding that specified that resources would be used to develop the career academies and that schools and districts would cooperate in an evaluation of the program. The major local decisions and processes that we expected to find affecting implementation included local decisions on the allocation of resources and on the extent of staff preparation to support the reform.

The career academy represents a complicated reform requiring new teaching styles, new teaching content, a new structural unit within the host school, and cooperative planning between new partners—academic, vocational, and JROTC instructors (in the JROTC Career Academy model) and schools and businesses (Stern, Raby, and Dayton, 1992). A five-year funding plan for the JROTC Career Academies was intended to support capacity building, but again, maximum flexibility was reserved to districts and schools, with no guidelines requiring staff development or program planning. Capacity-building instruments may incur the problems of establishing new structures, and may require a long time to accomplish intended outcomes. The time that it takes to bring about change

through capacity-building instruments suggests that the implementation of the JROTC Career Academies will be slow in developing and that an early evaluation could fail to uncover many important longer-term, slower-developing results. This led to recognizing the need for conducting at least a minimal long-term follow-up of each site.

What variables were important to consider because of the program's specific focus on at-risk students? McPartland (1994) has argued that there are four essential qualities of the school climate that motivate at-risk students to succeed: opportunities for success in schoolwork, a human climate of caring and support, relevance of school to students' community and future, and helping students with personal problems. The general level of morale among the teaching staff and staff members' overall commitment to students can be expected to directly affect the implementation process as well as student outcomes (see McPartland, 1994). The JROTC Career Academy model contains elements that address each of these essential qualities, except for a specific component focused on helping students with their personal problems. The variables highlighted by McPartland (1994) suggest that the analysis of JROTC Career Academy implementation should examine morale among teachers and students in the school (i.e., climate of caring and support), the choice of vocational focus chosen for each site (i.e., relevance to community and students' futures), and personal involvement of teachers with students (i.e., helping students with personal problems).

Even with many components built-in to the JROTC Career Academy design to help at-risk students, the problem of improving performance among at-risk students has proven to be relatively intractable and is likely to be viewed as such by the very teachers and administrators who were asked to implement the JROTC Career Academy program. This could influence their attitudes concerning the potential efficacy of the program and hence their commitment to implementing it. As a result, it was important to explore these attitudes.

It was clear from interviews during initial visits to the host schools, just after they were accepted into the program, that there was confusion about the sponsors' objectives and the model, and that local support, commitment, and capacity varied. Adding these observations to the findings of the implementation literature led us to address the following factors specifically associated with the JROTC Career Academies that we hypothesized would either foster or prohibit implementation.

Local contexts

- resources

- concurrent reforms
- leadership
- staff continuity
- district support
- experience with similar reforms.

Local decisions and processes

- allocation of resources
- staff preparation.

Tractability of the problems of at-risk students

- teacher morale
- student morale
- choice of occupational focus
- personal involvement of teachers with students
- staff commitment.

The open-ended interview technique that was used, as described below, was designed to uncover and identify additional factors affecting implementation.

Data Collection Design

We employed a longitudinal[3] multiple-case replication design (Yin, 1994) across all nine school sites implementing a JROTC Career Academy. The data collection was structured as a series of annual 2 1/2-day on-site interviews and telephone follow-ups focused on developing an accurate picture of the implementation process, a detailed description of the program as implemented at each site, and the specific contextual conditions affecting implementation. Every program site was treated as a separate case study. Because the sites had some common characteristics—large urban schools, many at-risk students, substantial financial constraints—we expected to find a number of shared experiences across sites. But because there were many differences from site to site, we also expected to find many dissimilar experiences related to local contextual variability.

[3]Progress in the development of the JROTC Career Academies will be followed for five years. This study reports on the first three years of the program: incorporation, planning, and initial implementation.

Our major sources of data and examples of the specific questions we asked during site visits and telephone interviews are listed in Table 4.1. For example, to understand the structure of the program being implemented we relied on interviews with the school principal, academy coordinator, teachers, school staff, students, and business partners, as well as classroom observations, and reviews of local documents. Information concerning the design of the policy was obtained from official program documents and from discussions with federal sponsors.

We completed two rounds of site visits—one in the spring of 1994 and the other in the spring of 1995.[4] We supplemented information collected during the annual site visits with phone or on-site interviews conducted approximately every six months with the Career Academy coordinators. Follow-up telephone interviews to gauge changes in program implementation were planned for 1999.

At the annual site visits, we conducted structured individual interviews with district and school administrators, and Career Academy coordinators. We conducted focus group sessions with all available Career Academy teachers (virtually 100 percent of academy teachers attended) and in addition individually interviewed several teachers at each school. As part of the focus groups, we also interviewed retired military personnel without teaching credentials who served as instructional partners (i.e., teaching assistants). We conducted focus groups with random samples of approximately 10 Career Academy students at each school, and with one group of parents. At the second round of site visits, we added focus groups with 10th grade students in their second year of academy participation. We also visited classrooms at each site to gain a sense of teacher-student relationships. Table 4.2 indicates the types and number of persons interviewed and the number of classes visited.

We constructed our interview and focus group protocols to contain parallel questions across sources, and to the extent possible, we cross-checked information obtained from one source with other sources. We also gleaned supporting information from federal and local program documents. During the second round of site visits, we asked the same questions as during the first, with an eye toward discovering what had changed during the ensuing year.

Each year, four researchers conducted the site visits, traveling in pairs to each site. At each site, both researchers attended the interviews; one researcher

[4]The Buffalo and Philadelphia academies were only visited in 1995 since they did not begin operation until the 1994–95 school year.

Table 4.1

Examples of Interview and/or Focus Group Questions

Research Framework and Data Sources	Sample Questions
Local Context District administrators School principal Academy coordinator Teachers School staff JROTC coordinator Background source	Has the district participated in any recent school reform or reorganization efforts? Have these efforts been successful? Are there any district programs similar to the academy program? What has the community reaction been to JROTC programs? How is the school viewed by the community (i.e., known for anything particular)? In the last five years, has enrollment or the student body changed? Why? In the last five years, has the faculty changed? Is this a site-based managed school? Does this school have any magnet programs? Do constituent groups in this district play an influential role in school reform or change? What have their recent positions or activities been? Is there a teachers' union? How many teachers in this school belong? What role does the teachers' union play in school reform or change?
Implementation Processes District administrators School principal Academy coordinator Teachers School staff JROTC coordinator Business partners	Why did the district decide to participate in the JROTC Career Academies program? Who was involved in making the decision to participate? Who took the lead? What was the involvement of the principal of the designated school? Once the district was notified of preliminary approval from DoD/DoED, what steps were taken to design the proposal? Describe the sequence of events and who was involved. What aspects of the program do you view as critical to the success of the academy? Have any unanticipated events affected program implementation? What kind of additional assistance would have helped you to successfully implement the JROTC Career Academy?

Table 4.1—continued

Research Framework and Data Sources	Sample Questions
Programs as Implemented School principal Academy coordinator Teachers School staff Students Business partners	What elements of the program seem to be working well and where do you see problems? How is the academy different from regular school (e.g., attitude of teachers, activities, coursework, feeling of "belonging")? What are the elements of a JROTC Career Academy? To what extent has each of the academy components been implemented at your site? Is there an academy team? How many teachers are involved? What are their teaching and other academy responsibilities? What course sequence is planned to provide students broad occupational exposure? Is there an integration of academic and vocational curricula? What has the role of JROTC been in the academy? Has anything changed for you as a teacher because of the JROTC Career Academy? What role does your firm play in the academy? What has the role of the Advisory Board been? How often are meetings? Who/how many attend? Meeting topics? What advantages/disadvantages has the link with JROTC offered? Have you encountered any difficulty in working with the JROTC at the national, regional, or local level? What has the response of the business community been to the academy? How were business partners obtained? What role are they playing in the academy?

conducted the interview and the other recorded notes using a laptop computer. Interviews lasted approximately one hour, except for the interviews with the academy coordinator, which lasted approximately two hours.

Table 4.2

Site Visit Respondents

Respondent	Year 1 (8 schools)	Year 2 (10 schools)
Principal	8	10
Coordinator	7[a]	8[a]
JROTC instructors	12	12
Teachers	62	68
Instructional partners	16	9
Other school personnel	3	7
Students	134	99
District personnel	6	12
Business/Community	12	9
Classroom visits	9	23
Parents	0	7
Total	269	265

[a]At two sites, the principal also serves as the academy coordinator.

At the end of each site visit, researchers edited their field notes for completeness and readability, reviewed the contents of each interview session, and reached consensus both on the implementation status of individual components and on factors that promoted or hindered implementation. Researchers focused on assessing implementation progress using as criteria the essential elements of career academies described in Section 2, and on identifying factors that had hindered or expedited implementation, in accordance with our conceptual framework.

We analyzed the implementation process and status of component implementation by synthesizing comments of administrators, academy coordinator, teachers, and students by site. We used the definition of minimum program implementation previously shown in Section 2 and repeated in Table 4.3 so that we could compare each site against a common standard. We used the following procedure as a basis for marking a component fully implemented, partially implemented, or not implemented:

- Fully implemented—All of the subelements of a component were present at a site.
- Partially implemented—At least one subelement was present.
- Not implemented—No subelements were present.

The results of this process appear in the next section.

Using federal documentation and interviews with federal program initiators as sources, we analyzed the effects of how the program was conceived, defined, and communicated to implementing sites on the implementation of the program. We synthesized contextual factors for each site by relying on federal, district, and school documentation and interview data from federal and local program initiators and coordinators, and from local background sources. Finally, we conducted cross-site analyses to determine whether common themes or issues existed across the implementing sites. The results of these analyses are discussed in the next section.

Table 4.3

Implementation Standards

Components	Standard of Minimum Implementation
School within a school	A discrete group of teachers and students are assigned to the academy.* A core of classes consists primarily of academy students and is taught by academy teachers.*
Block scheduling	At least 2 academy classes are scheduled back to back.* Blocked class time is used to advantage (e.g., occasional extended class periods; occasional joining of classes and instructors).
Occupational focus	A career area is defined. There is a defined sequence of core classes and work-related activities. There are defined goals for what students will know and be able to do upon graduation.
Integrated curriculum	Academic and vocational course curricula are integrated. Projects that cross course lines exist.
Common planning time	The majority of academy teachers have regular meetings, with a minimum of one per week.* Meetings are used for program planning (i.e., curricula planning, project development, etc.). Meetings are used for academy management and administration (i.e., student issues, budget, etc.).
Reduced student-teacher ratio	The academy has student-teacher ratios below that of the host school.*
Business partners	A business advisory council meets a minimum of twice per year.* Business representatives contribute to program development and planning.
Integration of JROTC	Enrollment in JROTC is required.* JROTC staff are represented in academy meetings.* JROTC coursework is integrated into the core program.

NOTE: * = structural element. Unmarked elements require changing instructional practices.

5. Status of Implementation

Our judgments of the status of implementation at the end of the first and second years[1] for each site are summarized in Figure 5.1. Black squares represent successfully implemented components, gray squares represent partial implementation of a component, and white squares represent components not implemented. These judgments were based on the standards for implementation defined in Section 2 (Table 2.1). The standards are also repeated in the first row of Figure 5.1. A subelement by subelement breakdown for the schools is included in Appendix B.

To summarize and compare implementation progress from the first to second year, we also calculated what can be loosely considered a "percentage implemented" for each school and for each component for each year. These percentages are based on a simple weighting scheme that attempts to capture, only in relative terms, how schools progressed from the first to second year, and the status of implementation of each component in the first and second years. For each component at each school, we assigned a weight of zero for "not implemented," one for "partially implemented," and two for "successfully implemented." Thus, for example, Buffalo was assigned 12 out of a maximum possible of 16 total points, or 75 percent (Table 5.1).

Comparing these percentages, Buffalo had made the greatest progress at the end of the first year of implementation (Table 5.1 and top of Figure 5.1). Charlotte, Locke, and Philadelphia had made the least progress. By the end of the second year (Table 5.1 and bottom of Figure 5.1), Hollywood and Louisville had nearly caught up with Buffalo's first-year progress, and most other schools had made substantial progress, although Washington regressed somewhat during its second year.

The components on which the greatest progress had been made during the first year were in establishing a school within a school, scheduling common planning time, and reducing student-teacher ratios (Table 5.2). The least success during the first year was in developing an integrated curriculum.

[1] Buffalo and Philadelphia first enrolled students in their Career Academies for school year 1994–95, so data were only available for their first year of operation.

First Year Implementation Status

	School-within-a-school	Block Scheduling	Occupational Focus	Integrated Curriculum	Common Planning Time	Reduced Student-Teacher Ratio	Business Partners	Integration with JROTC
Standards for "implemented"	The academy is a discrete unit within the school and there is a core of academy classes with academy teachers	At least two academy classes are scheduled back-to-back; innovative use is made of the blocked class time	A career area is identified; a defined sequence of classes and activities exists; goals are specified	Academic and vocational instructional materials are integrated; cross-cutting projects occur	Weekly meetings of academy staff are held; program planning and student progress are discussed	Student-teacher ratios are lower than in the rest of the school	There is an advisory council that meets twice or more per year; partners contribute to program definition and/or operation	Enrollment in JROTC is required; JROTC coursework and staff are integrated into the academy program
Buffalo (95)								
Louisville								
Hollywood								
Washington								
Dayton								
Indianapolis								
Charlotte MS								
Locke								
Philadelphia (95)								

Second Year Implementation Status

	School-within-a-school	Block Scheduling	Occupational Focus	Integrated Curriculum	Common Planning Time	Reduced Student-Teacher Ratio	Business Partners	Integration with JROTC
Buffalo	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed
Louisville								
Hollywood								
Washington								
Dayton								
Indianapolis								
Charlotte MS								
Charlotte HS								
Locke								
Philadelphia	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed

Implemented Partially Implemented Not Implemented

Figure 5.1—Status of Implementation at the End of the First and Second Years of Operation

Table 5.1

Summary of School Progress (in percentage)

Site	Year 1	Year 2
Buffalo	75	N/A
Louisville	63	69
Hollywood	56	69
Washington	50	38
Dayton	44	56
Indianapolis	38	63
Charlotte	31	44[a]
Locke	31	56
Philadelphia	31	N/A

[a]Assessment for Charlotte is conducted separately for the middle school and the high school. Each school's performance is considered as half of the site score.

Table 5.2

Summary of Component Implementation (in percentage)

Component	Year 1	Year 2
School within a school	93	79
Common planning time	57	64
Reduced student-teacher ratios	57	64
Block scheduling	36	36
Integration with JROTC	36	43
Business partners	29	86
Occupational focus	29	29
Integrated curriculum	21	50

NOTE: Data in this table are based on the seven sites for which we had two years of data—i.e., Buffalo and Philadelphia are excluded from these analyses.

During the second year, the largest gains were made in developing relationships with business partners and in developing an integrated curriculum.

Overall, the academies were successful in making some of the structural changes that a fully implemented JROTC academy program comprises—establishing the program as a discrete unit within the host school, scheduling teachers and students appropriately, scheduling meeting and planning time for the academy teachers and staff, and organizing and holding meetings of a business advisory board. They were less successful in changing instructional practices—defining an occupational focus for the academy; developing a sequence of courses and activities that would support it; integrating academic, vocational, and JROTC instruction; and developing and conducting projects that cut across academic and vocational courses. For example, six academies established blocked classes

providing extended periods of time, but in only a few instances was the time used in any innovative fashion, and similarly, time was allocated for academy team meetings at eight sites, but at all but three sites the time was used exclusively for administrative not curricular tasks or program development.

As researchers frequently note, educational change is slow and the limited progress made by the academies in their first two years is in line with our expectations and with the accomplishments of other career academy implementation efforts (see, e.g., McCollum, 1994; Kemple and Rock, 1996; and Dayton, Weisberg, and Stern, 1989).

Accomplishment of Structural Elements

Many of the components listed in Table 4.3 have two parts, a structural element and an instructional practice element. For example, block scheduling encompasses (1) a back-to-back class schedule structure, and (2) that the blocked time is used for joining classes together, cross-curriculum projects, extended instruction or for any other use the academy team finds advantageous for advancing the program. Academies had more success with the structural aspects than the substantive aspects of an academy program. The following discussion describes those elements of academy components that most sites were able to establish.

Establishing a School Within a School

All sites established an identifiable core of teachers and students distinct from the rest of the school in their first year of implementation. In each school, a group of teachers reported that they identified themselves with the academy, regardless of whether they had classes containing purely academy students. They knew who the academy students were, shared information about them, and intensively tracked students' absences and behavior—more so than is done for other students in the school.

Even more than the teachers, the students identified themselves as being in a special program. In focus groups at several sites, students described the academy as "one big family." At all sites, they knew teachers were sharing information about them and that teachers cared about their progress and development. Students saw the academy as different because of the increased attention they received both in and out of the classroom. For example, during focus groups students reported:

> "They [teachers] call [home] not just for bad, but if you're doing good." "You get more help here." "The teachers care." "The teachers take time out to talk to you instead of sending you to the office automatically." "This year, I'm getting better grades and hanging with a different crowd. They keep me out of trouble. I'm more respectful with my parents." "You see everybody [other academy students] all the time." "Someone cares enough to call home if you're not there." "They teach you responsible things. I got like addicted to it."

Similar sentiments were widely expressed during focus groups at all of the academies.

Sites ranged from having one to having all classes restricted solely to academy students. Seven of the nine first-year sites and five of the seven second-year sites had four or more pure academy classes. The average number of discrete academy classes was four. Even in sites where a majority of classes were not restricted to academy students, teachers reported that usually in "academy" classes at least half of the students were academy students. Students did not make distinctions between classes with "only" versus "mostly" academy students. They reported that they spent most of their day with other academy students, including lunchtime and out-of-school time.

Schools that had difficulty establishing discrete academy classes encountered a variety of obstacles—e.g., school scheduling policies, such as dividing the entire freshman cohort into four clusters regardless of special programs or setting minimum class sizes that were too large to be filled solely with academy students; problems accommodating students' differing mathematics abilities; and, most frequently, failure on the part of the school administrator to direct schedulers to arrange discrete academy classes. Two schools, in Dayton and Washington, resisted breaking out of a relatively entrenched traditional industrial arts model that meant students became increasingly dispersed in their second year.

Block Scheduling and Common Planning Time

How was the school-within-a-school structure achieved? Besides creating an academy group of teachers and students and special academy classes, two other scheduling tools were used—(1) most sites designated either an entire morning or afternoon for academy student classes, which kept academy students grouped together, and (2) common planning time was arranged for academy teachers. In

six of the nine first-year sites and four and one-half[2] of the seven second-year sites, at least two academy classes were scheduled back to back, creating a flexible block of instructional time.

All but one academy site was able to arrange some common time for academy staff meetings. Meeting times varied, including after school and Saturday mornings, but generally meetings occurred during teachers' preparation periods. At four sites, teachers had two preparation periods, one for academy planning and one for classroom preparation. Four academy staff teams met together formally once or twice a week. Teams in three sites met daily. At one site, academy teachers met by eating lunch together every day. Even at times when all academy teachers could not get together, a central core met regularly, and others exchanged information more informally. Two sites did not take advantage of the scheduled common planning time because their academy coordinators reported it was not necessary to gather teachers together even though a common period was available. In the site in which no common planning time was scheduled, the coordinator could not explain why the time was not scheduled.

Meetings dealt with management issues such as exchanging information on student progress, student discipline, scheduling activities, or the budget. Only three sites used the time for any program planning.

Reduced Student-Teacher Ratio

Achieving a smaller student-teacher ratio depended primarily on the actions of school administrative staff. Five of the sites were able to reduce the student-teacher ratio using a variety of approaches: (1) the principal allocated more staff members to the program, (2) program funds were used to hire additional staff members, or (3) retired military personnel were hired and paired with regular teachers. The latter two solutions depended on program resources that ended in 1998. Average student-teacher ratio in these academies was 14:1, with class sizes ranging from 9 to 18.

Sites that did not reduce student-teacher ratios cited existing constraints—e.g., union-negotiated class sizes, or existing school structural arrangements such as divisions of the entire student body into subunits known as clusters. The difficulty of obtaining smaller student-teacher ratios in school districts with limited resources begs the question of the extent to which this is a critical

[2]Assessment for Charlotte is conducted separately for the middle school and the high school. Each school's performance is considered as half of the site score.

academy component. While all sites with reduced student-teacher ratios reported to us that smaller class sizes provided students with more attention, this component may not be viable over the long-term without a steady flow of program funding.

Business Partners

Business partnerships were slow to develop and provided little initial program development input. Once the academies themselves had a clearer picture of their academy program, they began to seek support from the business community. The development of business partnerships reminded one respondent of high school dances, where the potential partners were too shy to ask the other to dance. Businesses waited to be contacted by the schools; schools tried to figure out what they wanted the businesses to do for them and how to ask. During the first year, only one academy had a business advisory board that met regularly, and only two had sought business input to academy program development.

There were at least three cases of schools failing to adapt to a business-like style of communication. One business partner gave the school a fax machine to foster communication with him, but he never received a fax from the school. Another business partner remarked on the poor quality of written communications coming from the school district—poor grammar and overall sloppy appearance that would not have been acceptable in a business environment. A third edited and published a newsletter for the academy but was derided soundly by a teacher for correcting the grammar in the material provided by the students.

By the second year, establishment of a business support structure for the academies was begun in earnest. Six of seven academies had advisory boards that met regularly, with all but one providing input into the academy program or operation. Another academy had an advisory committee that met regularly for the school as a whole and held meetings with relevant academy business partners on a one-to-one basis.

Integration with JROTC

JROTC staff were active academy team members in eight of the nine sites, participating as full team members in all academy planning, field trips, and other activities. Other academic and vocational academy teachers in these sites reported being active in JROTC activities—e.g., attending awards ceremonies and military balls. Less successful was the integration of JROTC curricula with other academy curricula, which we discuss below.

In addition to the JROTC class instructors, two or more of the academy team members in six sites were retired military personnel serving as academic or vocational instructors. Since they were located and instructionally categorized with the academic and vocational members of the team but were retired military personnel, they often served as a bridge between JROTC instructors and the rest of the academy team. They brought task-oriented organizational skills to the educational environment, organizing field trips, supervising classroom and office renovations, planning and overseeing equipment purchases, initiating and sustaining business contacts, but lacked the class management skills of experienced teachers.

Academic teachers in one academy characterized the retired military personnel as "a breath of fresh air," showing students and faculty that projects could be accomplished. At one site, retired military personnel pursued the completion of an electric car project despite severe obstacles, winning the student team a "Press on Regardless" award in a national racing competition that culminated the project. Staff felt the award was emblematic of the military commitment to getting things done.

At some academies, retired military personnel performed nonteaching functions. At one school, the principal and nonmilitary academy coordinator designed a program using retired military as aides in all academy classrooms. When not in the classroom, they had specific management tasks, such as business/community relations, curriculum development, developing student standards and performance, encouraging parent involvement, procuring equipment, organizing student activities, preparing grant proposals, etc.

Integration of JROTC and civilian teachers did not always proceed smoothly; at one site, for example, during the first year unclear program leadership and lines of authority led to loss of key personnel and lack of program follow-through. Projects were not put into place, equipment was not ordered, and activities did not occur as envisioned. JROTC activities were separated from the academy, and academic staff felt the JROTC course requirement was unpalatable to the type of students attracted to the academy's occupational focus. By the end of the second year, however, the entire academy team reported a greater understanding of roles, responsibilities, and the academy approach.

At two sites where there were new principals the second year and several other sites where team teachers retired or moved to other positions, the retired military personnel were a stable program core that provided continuity for students.

Difficulty Accomplishing Instructional Practice Elements

Developing the academy program—including defining the overarching nature of the occupational focus; integrating academic, vocational, and JROTC coursework; and obtaining and utilizing business input—was difficult for academies to implement. While academies were able to set up the structures that underlie an academy program, using these structures for program development (e.g., making use of the time established for teachers, students, and business partners) was more difficult. For example, sites established staff common planning time but then used it to discuss and resolve administrative rather than instructional issues. Blocks of class time were established, but only rarely were classes combined or innovative curricular activities undertaken. Business relationships were generally established too late to provide input into the program's development. In general, defining the program, creating a coherent instructional sequence for students, setting the goals students would be expected to attain through the program, and building the curriculum was beyond the initial reach of all sites. Below, we describe the academies' progress on these elements and the challenges they faced.

Occupational Focus

Each academy was asked to designate a broad career area encompassing a range of occupational options, such as the career area of building construction—encompassing occupational options ranging from carpenter to engineer or architect. The occupational focus was intended to provide the integrative core for the program, introducing students to the range of occupations available in the career area and providing opportunities for students to develop the academic and vocational background that could lead to entry into those occupations—either immediately after high school or after additional academic and/or vocational training.

Academies had mixed results establishing an occupational focus, specifying relevant goals, and developing the courses and activities that would help students achieve the goals prior to graduation. By the end of the first year, all of the academies had named an occupational focus (Table 5.3), but in two-thirds of the sites, the occupational focus did not serve as the driving force around which to organize curriculum, workplace experiences, or other academy activities. Three schools tried to build an academy structure around existing traditional industrial arts programs. At these sites, administrators and staff wanted to serve as many students as possible and were reluctant to require students in the

academy to concentrate on even a broad vocational area. The broad range of the programs made it impossible to schedule students into a single vocational class or to develop an integrated curriculum. Those academies operated as an industrial arts program with a JROTC requirement rather than an integrated program centered on a career area with a range of occupational options.

None of the academies chose their occupational focus as the result of a formal assessment of job opportunities in their community or in consultation with the local chamber of commerce or state or local economic development office. Rather, the selections reflected the perceptions of the academy developers about what would fit well into their school and into the expertise of existing staff, and what would be appealing to students.

Table 5.3

Occupational Focus of JROTC Career Academies

Academy	Occupational Focus	Military Partner
Buffalo	Avionics	Air Force
Charlotte	Computers (revised to electronics)	Army
Dayton	Construction	Army
Indianapolis	Aviation	Army
Los Angeles - Hollywood	Business (revised to media)	Army
Los Angeles - Locke	Performing arts	Navy
Louisville	Aviation	Navy
Philadelphia	Aviation and aerospace	Air Force
Washington, D.C.	Integrated design and electronics	Army

Initially, none of the sites developed a specific set of goals for what students should know and be able to do at the completion of the program to guide program requirements, course content, or student expectations. Only one site, Louisville, had developed specific course content for a full four-year sequence of courses and had an introductory class designed to acquaint students with the occupational field. Both developments were a function of Louisville's preexisting magnet program. Other sites had a sequence of vocational course *titles* (e.g., Engineering 2 and Engineering 3) and developed the course content and supporting activities as needed.

As the second year of implementation progressed, however, academies began to increase their attention to instructional issues. Half of the sites began to use some common planning periods for program planning and to develop some integrated curricula. With more specific curriculum planning, academies also examined their chosen occupational area more closely. Two elected to change their academy's focus—one to better fit the needs of the surrounding community and the other to provide a broader range of career exposure.

Integration of Academic, Vocational, and JROTC Curricula

Before enrolling students and beginning their first year of operation, only three sites did extensive planning to develop the academy program or create integrated innovative curricula. Unfortunately, in two of these sites, the plans were never carried out for lack of follow-through. Typically, planning occurred *as needed,* and minimal curricular integration (e.g., using vocational terms in the English spelling lesson) occurred during the initial year of the academies' operation.

Two sites engaged in extensive integrated projects that included the entire academy team. At an academy with a business focus, for example, students planned and executed a business to sell pens. Costs were calculated in the mathematics class, a marketing survey was done in social studies, etc. At another school with an electronics focus, various classes prepared students for the visit of a helicopter flown in by a local Army National Guard unit—e.g., hydraulics were studied in science and a subsequent report about the event was prepared in English class.

At a third site, with an avionics focus, academic and JROTC materials were integrated. A single instructor taught both earth science and "Introduction to Avionics" in a back-to-back block. The latter course was based on the Air Force JROTC's fourth-year elective. Integrated topics included among others meteorology, longitude and latitude, and wind and flight calculations, and the classes were often taught as one continuous subject.

JROTC curricular materials include topics that complement some academic and vocational subjects. Instruction includes communication skills similar to English units, map reading skills similar to social studies, military history, the physics of flight, and drill. Two sites incorporated Air Force JROTC materials into their aviation-related vocational instruction, one by using the Air Force JROTC course as its vocational course. During year two, arrangements were being negotiated to combine JROTC and social studies at one school, and JROTC and physical education at another school.

In a few sites, some JROTC and academic instruction, e.g. map reading and military history, was integrated. JROTC instructors were reluctant, however, to make many changes to their program, although they had substantial leeway from their JROTC commands to do so. In most sites, all JROTC cadets, whether they were in the academy or not, were treated the same and received the same instruction.

Program Input from Business Partners

Until their programs were more clearly defined, most academies were reluctant to establish collaborative partnerships with relevant businesses—partnerships where the school and businesses together would develop the course sequences, curriculum, and goals. In only two sites did business partners contribute to the program definition. Instead, schools made use of businesses to supply limited resources for specific program needs (e.g., airplane parts and equipment, materials for special projects, guidance in equipment purchases).

During the second year, five out of seven academies sought business contributions. Businesses responded with valuable advice (e.g., help in developing curriculum and design of a performing arts studio), services (e.g., provision of speakers, mentors, and printing of flyers), resources (e.g., a classroom at the business site), and job experiences (e.g., internships, job shadowing, and workplace visits). They did not offer funding toward the sustainment of the academies and reported that they preferred other types of involvement. Most business partners we interviewed expressed a desire to contribute to the design of the academy program, although they were rarely asked to do so.

Summary

The many changes that were observed in the academies between their first and second years of operation reflected continuing adaptation of the program to local cultures. The occasional regression from year one to year two is evidence of both local adaptation and the difficulty of establishing enduring second-order changes (Cuban, 1988). Nonetheless, it is instructive to note the distinction in rates of success between structural change and change in instructional practices, even though both represent second-order change. By creating opportunities for teachers to work more closely together as a team and to become more involved in the lives of their students, beyond each teacher's individual classroom, and for students to bond together through shared experiences, these changes met two of the needs that McPartland (1994) identified as important for motivating at-risk students to succeed. These are the need for opportunities to succeed in schoolwork and the need for a human climate of caring and support.

Reduced student-teacher ratios allowed greater interaction in the classroom. Common planning time, where teachers shared their experiences with other academy teachers as part of managing the academy, allowed teachers to stay in touch with how their students were performing and behaving throughout the

school day. And block scheduling meant that students came to know their classmates better simply because they were spending more class time together, creating shared experiences that provided greater opportunities for bonding and ultimately a more caring and supportive environment.

However, changes in instructional practices were not so easily made. The instructional changes planned for career academies require time-consuming and expensive capacity building (McDonnell and Grubb, 1991). They require time and resources for teachers to be trained and time for teachers to develop and implement what they have learned. In a study of restructuring experiments in three schools, Peterson, McCarthy, and Elmore (1996) also noted that structural changes occurred but instructional practices did not change. They hypothesized that "school structures can provide opportunities for the learning of new teaching practices and new strategies for student learning, but structures, by themselves, do not cause the learning to occur" (p. 148). Changing what teachers do in classrooms is a function of learning new practices and the desire to use them, coupled with structural change that supports the extension of that learning into classrooms. To the extent that staff development in the JROTC Career Academies was minimal and many teachers were reluctant to change traditional instructional practices, critical pieces of the equation were missing. It may be that these aspects of the academies will continue to develop over a period of time and that we did not uncover more of them because of the short two-year time frame the academies were operating when we observed them.

However, Stern, Raby, and Dayton (1992) mention several threats to keeping career academies going, not the least of which is high rates of mobility among teachers and administrators. Under these circumstances the capacity building required to support changes in instructional practices in career academies would need to be an ongoing process if such changes are to develop and survive.

6. Factors Affecting Implementation

In the previous section, we described the implementation progress of the academies. In this section, we examine factors that eased or hindered implementation. Following the research design described in Section 4, we examined the factors we hypothesized would have positive or adverse effects on implementation processes, local contextual factors, and the tractability of the problem.

In evaluating the implementation of the JROTC Career Academies, we considered how the program was originally defined, including the nature of the policy instrument and the mechanisms that were put in place to ensure implementation, and also how the program was communicated during the solicitation of sites. We investigated local issues that were paramount in each district—e.g., budget pressures, state testing requirements, course-taking reforms, and other concurrent reform efforts. We examined the experience that districts, schools, and academy leaders had with similar programs to gauge how local capacity to initiate and direct the Career Academy may have affected implementation. We explored the quality of leadership at all levels of the program. We looked at how local decisions regarding staff recruitment and preparation, student recruitment, and allocation of resources affected implementation. Finally we considered the complexity of the JROTC Career Academy model itself.

Policy Design

As noted in Section 4, when program sponsors designed the JROTC Career Academy program, they wanted to encourage local adaptation and innovation. As a result, they included financial *inducements* to encourage fidelity to the program components rather than *mandating* change. Funding was long-term to provide five years of stable resources for program development and to develop the capacity of program implementers. The long-term effect of these policy decisions is impossible to predict, but in the short term, teachers and administrators felt that sponsors did not communicate the program design to the participating sites clearly enough. Sponsors may have inadvertently erred on the side of flexibility when drawing the line between imposing conditions to achieve their goals and encouraging local creativity. Lack of specific requirements for

periodic accountability reduced the incentive to improve the academy staff's capacity to implement the program, and lack of expenditure guidelines allowed schools to use program resources for short-term purposes such as teacher salaries that failed to build lasting program benefits through staff development and purchases of equipment and materials. In short, the program was more "carrot" than "stick."

Program Definition

The design of the JROTC Career Academy program was influenced by the federal context at the time (see Section 3). Multiple sponsors, including various offices within DoED, and within DoD, the Office of the Secretary, and the military services (Army, Navy, and Air Force), as well as their JROTC commands, communicated somewhat different perceptions of the nature of a JROTC Career Academy. Uncertainty about specific program requirements and goals lingered at two-thirds of the sites during the initial implementation phase.

While DoD/DoED planning documents outlined a program based on the academy model as embodied in the Philadelphia and California academies, initial descriptions of the program to interested districts did not include the details of this academy model. Furthermore, neither the original "Fact Sheet" sent to districts by the Department of Education nor the accompanying "Criteria for the Development of the Career Academies" clearly communicated the structure of the career academy model to the local districts. One principal later described implementing the academy program "like driving down the road in a fog."

As a result, only one district submitted a plan that gave evidence of familiarity with the formal career academy model as well as an intention to implement it. Plans from two districts were written or coordinated by JROTC personnel who apparently saw the program as instituting *military* academies and not *career* academies. The plans from the remaining six sites had mixtures of elements focusing on at-risk students, JROTC, and vocational education, but were not structured as career academies. Several sites retained the broad focus and course content typical of traditional industrial arts programs. DoD, DoED, and RAND made it clear that they did not want the career academies to duplicate existing JROTC or traditional vocational programs, nor did they want JROTC to be the central core or theme of the academies.

In an effort to bring school proposals in line with the academy model, DoD and DoED provided detailed feedback on the initial plans and guidance for revising proposals. RAND staff visited each academy to clarify the intent of the program

sponsors to establish career academies using the Philadelphia/California career academy model. At a kick-off conference hosted by RAND, DoD speakers, including the commander of the U.S. Army's Cadet Command (the U.S. Army command that is responsible for JROTC programs nationwide), emphasized that the academies were a school-based, not a military-based, program. Representatives from the California and Philadelphia academies described the components of the academy model to representatives from all participating school districts.

School districts were reluctant, however, to change their original proposals, for three primary reasons. First, in the interests of moving forward with implementation and reducing the risk of losing year-end funds, by the end of 1992 all targeted districts were notified of their acceptance into the program even though their original plans did not correspond fully with the career academy model. Second, districts assumed their plans were accepted as written. Some schools' vision of the program had already begun to crystallize around their original proposals. Finally, some teachers and administrators were skeptical of implementing the career academy model. During site visits, they reported an attachment to traditional practices and a reluctance to focus more narrowly on a specific career area, fearing that such a focus would limit the attractiveness of the program to students. Teachers wanted a program that would help all of their students and felt that instituting a program with a career area focus instead of one with a wide range of vocational options would exclude too many students.

Evidence from the first-year site visits indicated that several schools still had not revised their original plans, and with funding in hand, there was little incentive to make changes during implementation.

The initial lack of clarity over program elements hindered academy development during the first two years of implementation for some schools. This led, in some instances, to programs with unclear specifications for what students should be expected to achieve, and in other instances, to less-than-adequate instructional planning to develop courses in line with the program goals.

However, by the end of the second year of implementation, three additional districts had moved closer to the career academy model and had taken steps to align their programs with it. Finally, as discussed in Section 5, although most schools adopted few if any of the pedagogical changes envisioned in the career academy model, by the end of the second year, most schools were successful in implementing several of its structural components.

Program Accountability and Monitoring

RAND's mandate to evaluate the implementation of the academies became a vehicle for program accountability and for assisting the schools in implementing the components of the career academy model. RAND's site visits focused on the status of implementation of the elements of the model, and the results of these visits were presented at follow-on annual workshops to representatives of all participating schools and districts. A review of each site's progress that was presented to representatives from all academy sites at a summer workshop concluding the first year of academy operation spurred program implementation reflecting the academy model.

By the second year, we found that one school had engaged in a formal self-evaluation of implementation progress on academy components prior to our site visit. Representatives from the military services' JROTC commands also began to make site visits during which they examined the progress of their Career Academies against the same implementation standards. These activities created an incentive for schools to chart their own progress toward implementation and became the source of accountability within the program.

District and school personnel frequently had questions about program operation that needed to be answered by the program's sponsors. Many of the early concerns centered around finding and hiring qualified retired military personnel, but also included questions about when funds would be available, what restrictions were associated with them, and a host of other issues such as what should be the relationship between the JROTC staff associated with the academy and the regular JROTC personnel at the schools.

The DoD, individual military services, and DoED all designated points of contact for the JROTC Career Academy program, and these were the people that the schools called when they had questions. Some of these contacts changed each year, leaving little accumulated institutional knowledge or continuity in the districts' main points of reference in the federal government (see Table 6.1). It was fortunate that the DoD program sponsor in the Office of the Secretary of Defense possessed long-term familiarity with the program and its participants. He was a constant source of information and decisionmaking throughout the first three years of program planning and implementation. However, the near-constant turnover among the others meant that the weight of program management fell almost entirely on his shoulders, and this program was only one of his many ongoing responsibilities in the DoD.

Table 6.1

Continuity of Federal Representatives

Points of Contact from:	No. in First Three Years
DoD	
Program sponsor	1
Assistant	3
Executive agent	3
Military services	
Army	1
Navy	1
Air Force	2
DoED	4

The JROTC Career Academies also required cooperation among the services. For example, traditionally, Army JROTC programs hire retired Army personnel, Air Force JROTC programs hire retired Air Force personnel, and Navy JROTC programs hire retired Navy personnel. When some Army JROTC Career Academies ran into difficulties finding qualified retired Army personnel and wanted to hire retired Air Force personnel instead, the services worked together to find a way to accommodate this, although these agreements took time to reach and slowed the process of hiring retired military personnel in several sites.

Summary of Policy Design Findings

- Program sponsors did not provide a detailed conception of the JROTC Career Academy model to participating school districts. Because sponsors did not, schools responded primarily with traditional models of vocational education, taught by retired military personnel, that included required enrollment in JROTC.
- Because schools were permitted considerable flexibility in their programs, there were few incentives for schools to conform to the Philadelphia/California career academy model.
- Structural changes that complied with the career academy model (e.g., common planning periods and block schedules) could be—and were—made often without modifying the schools' traditional instructional practices (i.e., traditional vocational education and traditional JROTC instruction). The slow progress in changing instructional practices that we observed stems partly from unclear program definition at the outset.
- Points of contact at the federal level (except within the Office of the Secretary of Defense) changed frequently, making it difficult for sites to locate

appropriate staff to answer questions. Sponsors turned their attention to the program primarily in response to crises.

- Branches of the services worked cooperatively to provide flexibility in hiring retired military personnel.

Local Contexts

Local environments stressed by budgetary pressures, state educational improvement efforts, and other reform agendas complicated the initiation of the JROTC academies. Union regulations and teacher hiring practices were also obstacles in several sites.

Skilled, committed leaders at the district and school level are the most influential factor in successful implementation (Mazmanian and Sabatier, 1989). The priority that leaders place on accomplishing project objectives indicates their commitment to making the reform occur, and their skill at using appropriate resources, smoothing obstacles from the path, and directing the implementation process indicates the likelihood of realizing their objectives.

Budgetary Pressures

Six of the nine school districts were facing severe budgetary pressures with attendant school closures and cutbacks in personnel at the time the program was initiated. Two of the schools hosting academies delayed recruiting students or staff because they were unsure whether their doors would remain open for the start of the academies. At one site, retirement incentives for experienced administrators and teachers left few administrators with experience in school reform efforts. Teachers at two sites had not received a raise in several years, lowering staff morale. At another site, district financial support for magnet-like programs was dramatically cut.

These financial pressures caused districts to be reluctant to forward-fund academy development, preferring to wait until the federal funds were in-hand before incurring program expenses. While the amount of federal funds allocated per site were substantial (approximately $500,000 over a five-year period), the schedule of federal funding disbursements remained uncertain and exacerbated the districts' concerns and start-up arrangements. For example, planning funds were made available in March of the 1993 planning year even though sites had been accepted into the program six months earlier. The second installment of

funds was disbursed in October of 1993, after the opening of the first seven academies in August and September of 1993.

At five academy sites, initial program development, purchase of equipment, remodeling, and/or staff recruitment were delayed because of district financial constraints and the schedule of federal funds. These delays had wide ramifications: Staff were not on board to participate in staff development or program design, recruitment of adequate numbers of students for the opening year was problematic because of the delays in staff recruiting and program planning, equipment did not arrive to support planned projects often until the spring of 1994, remodeling was not completed until well into the 1993–94 school year, and students and staff became dissatisfied when promised program features were not available.

Districts were also unclear about how federally provided academy resources (i.e., funds and retired military personnel) could be used. Areas of initial confusion included whether the funds could be used for staff development, whether funds could be carried over from year to year, whether academy equipment had to be used solely for academy students, and whether retired military personnel could be paid to teach academic classes. Program sponsors responded by giving districts broad leeway to use funds as they saw fit for program development, answering questions as they arose. Such flexibility was provided to the districts to free their academy expenditures from burdensome reporting requirements, but the districts were so unfamiliar with such unencumbered funding that it confused them. Because districts were accustomed to more formal procedures attached to the expenditure of federal money, the lack of written guidelines made districts hesitant to spend the funds they had. In addition, districts were understandably cautious about establishing a new program that they might ultimately be unable to sustain with local resources.

Other State and Local Reforms

Pressures to meet changing state and local standards diverted the schools' attention from developing career academies. Curriculum integration at three schools was perceived as adapting curricula and teacher practices to meet high-stakes testing mandates, or charging all teachers with specific assignments to prepare students for state testing. Academy common planning time was used to develop strategies to assist students in test performance, draining attention from bringing about the reforms in instructional practices associated with the academies—e.g., developing an integrated vocational and academic curriculum. One school was on probation because of poor test performance and had been

given a mandate to improve performance—within a district already threatened by state takeover if achievement and attendance did not improve. The principal was seeking short-term programs that would retain and engage students rather than investing in the more complex far-reaching reforms incorporated in the academy program.

Four districts already had major reform efforts under way in JROTC Career Academy schools. One site had other career academies, two sites had magnet programs, and the fourth had a system of student clusters. In all but one of the above cases, existing reforms reshaped the academy program. In the school with existing academies, the JROTC Career Academy was an easy fit, except that its initially small size and the district's union rules on teacher-to-student ratios precluded classes limited to JROTC Career Academy students. One of the schools with a magnet program used the new resources to expand the existing program. The JROTC Career Academy was treated as an element of the overall magnet program, with academy students mainstreamed into the magnet's vocational classes, but blocking academy students into discrete classes for their academic program. The other school with a magnet program drew on the coordinator's magnet experience to establish the JROTC Career Academy as a new and distinct program offering for students. At the cluster organized school, the JROTC Career Academy students were scheduled into one of the existing clusters. Academy students were typically grouped together but did not have discrete classes. In each case, the school principal used his or her judgment to best fit the program into school reform priorities with the frequent result that the program assumed a different shape to accommodate the local context.

District Leadership

School districts normally have staff offices that provide, arrange, coordinate and/or support focused in-service teacher training, curriculum development activities, capital improvements and equipment procurement, and budget management services. Such offices also help schools obtain necessary waivers from district or state rules, make and maintain connections with local businesses, and establish networks among directors of similar programs.

All of the districts with a JROTC Career Academy program either had in place a career academy office, a magnet or special program office, or a vocational program office responsible for providing these kinds of support. All of the districts' central offices helped process the hiring of retired military staff. And all of the districts, except two that used private nonprofit organizations, received and disbursed academy funds.

Two districts helped obtain and organize business partnerships, and two provided substantial support for curriculum and program development, doing everything short of going to the schools and running the programs. In all but these latter two districts, however, the district staff offices could best be described as supportive rather than directive. In most districts, unless a request for assistance came from the academy and was approved by the school's principal, the district staff rarely visited the academies. It is important to note that the districts stood ready to help, but that academies primarily asked for personnel, budgetary, facilities' renovation, and procurement help. They rarely requested programmatic assistance.

This penchant for an arm's-length stance may derive from the autonomous nature of schools and the relatively strong degree of authority that is vested in school principals. For example, when one district administrator was asked what would happen to the JROTC Career Academy program if federal funding was cut, rather than responding that the district would make the decision to support or drop the program, the answer was "bottom line—the principal decides."

Did district support play a role in speeding successful implementation of the JROTC Career Academy programs? Our conclusions are mixed. For example, one of the two districts that provided the most support was among the most successful in implementing the program, but in the other district where support was readily supplied, the program implementation was one of the least successful—strong district support was unable to offset the impact of other factors.

School Leadership

The lack of a strong, knowledgeable administrator for the academy (principal, vice principal, or experienced teacher as academy coordinator) to shepherd the process of program development was a critical weakness in most sites. Principals tended to leave academy development to the academy coordinators, but at two-thirds of the sites (particularly those with military coordinators) the process was impeded because the coordinators lacked experience in developing academic programs.

School Principals. The authority that principals exercise in their schools places them at the crux of any implementation. Active involvement coupled with year-to-year continuity of a principal at the school leads to greater progress and success in implementation (see Bossert et al., 1982; Hallinger, Murphy, and Hausman, 1992), and this was borne out in the JROTC Career Academy program.

The complexity of the career academy model—requiring not only substantial leadership to reform instructional practices but also to change schedules in ways that are potentially disruptive to the entire school—underscores the importance of the principal's active support and involvement.

During our site visits, all of the principals voiced their support for the program and remarked that it fit their schools' goals. However, many noted that their attention could be diverted from providing academic leadership by a number of competing needs, such as state performance mandates or other reforms. In two schools, it was evident that the principals' energy and attention were diverted from programmatic concerns to seemingly constant crisis control. For example, in one school it was impossible to have an uninterrupted conversation with the principal because he was constantly summoned on his portable radio to personally resolve one problem after another. At another school, the principal interrupted our interview to stand and look out his office window while students were loading into their school buses for the ride home. His concern was for the potential repeat of a drive-by shooting that had occurred a few weeks earlier.

The amount of attention principals paid to the academy varied from school to school. We categorized principals as academy coordinators, actively involved, and uninvolved.

Principals as Academy Coordinators: Two principals essentially served as academy coordinators. While they designated other school administrators to supervise the program, they personally designed the initial program, selected staff, attended and directed all academy staff meetings, made the necessary scheduling arrangements for discrete academy classes, blocked schedules, arranged for common planning time and for staff and program development, and pursued business partners. Because the principals were such an active force in developing these two academies, there were no administrative barriers to the implementation of the academy; however, the programs that were implemented were a direct reflection of the principal's program conception. In one of these cases, this led to considerable substantive differences from the academy model with regard to the program's content and goals.

Actively Involved Principals: At three academies, principals left most day-to-day operations to academy coordinators but lent their support as necessary to smooth the way for scheduling, community relationships, and district interactions. These principals facilitated the school scheduling changes necessary to achieve block scheduling and common planning time and worked with district administrators to hire retired military personnel and to complete building renovations. They were present at academy activities and parent meetings and

were available to meet with business partners. At the end of year two, these schools were the furthest along in academy implementation.

Uninvolved Principals: Principals at the remaining schools left direction of the program to the academy coordinator and typically did not facilitate the academies' implementation or review its faithfulness to the academy model. Academy coordinators had difficulty obtaining discrete academy classes, spending funds, or creating coherent programs with long-range objectives.

Continuity in school leadership also proved critical. Five schools had a change in principal, and in two of these schools there were new principals each of the first three years of the program (see Table 6.2). Three programs had a change in the academy coordinator during the same period of time, and all experienced some staffing changes. At two of the schools with the highest number of staffing changes, there was little continuity in program development and particularly poor progress in implementing the academy program.

Academy Coordinators. Seven of the nine principals named an academy coordinator to provide day-to-day leadership of the academy. Two coordinators were experienced educators, and five were either a JROTC instructor or other retired military staff member. The educators were experienced in their districts, and their schools had successful magnet or academy programs already operating. They were able to initiate cross-curricular projects integrating academic and vocational content, but comprehensive planning lagged at both schools. The retired military coordinators, although motivated and resourceful as the result of successful military careers, had little experience in high school settings and little or no experience or training to prepare them for implementing academic reforms. Three were entirely new to their school district. The retired military coordinators were very successful when dealing with some issues, such as renovating facilities, recruiting students, planning class trips, arranging business speakers, or when working one-on-one with students. They were less successful when it came to setting goals and expectations, directing curriculum development, planning for long-range student outcomes, and developing the course and activity sequencing to support their programs. They were often simply unaware of the resources available to them in their school or district.

Why did so few principals name an experienced educator to implement and lead a program of this nature? Three reasons are apparent. First, many of the principals initially did not recognize the program as an academic reform program that needed academic leadership—we have evidence from interviews and focus groups that the program was misunderstood at the outset as a JROTC program. Second, naming an educator meant taking a teacher out of a

classroom—an already scarce resource in these schools. And third, DoD reimbursed the school district for the full cost of the retired military person, so these were seen as "free" resources.

Table 6.2

Continuity of Local Leadership During Planning and the First Two Years of Academy Implementation

	No. of Principals in First Three Years	No. of Academy Coordinators in First Three Years
Buffalo	1	1
Charlotte[a]	3	1
Dayton	1	1
Indianapolis	1	1
Hollywood	1	1
Locke	2	2
Louisville	1	1
Philadelphia	3	2
Washington, D.C.	2	2

[a] Assessment for Charlotte is conducted separately for the middle school and the high school. Both schools had changes of principal.

Local Experience with Similar Reforms

We speculated that a lack of experience by academy leaders in administering the complex reform involved in an academy might impede implementation. Offsetting the difficulties we foresaw, we also speculated that prior school experience with similar programs such as magnets and other academies might ease the development of the academy program. And since program start-up funds were quite generous (see discussion later in this section), we thought that appropriate allocation of program funds would support the extensive staff development and planning time necessary to address the academy model, the substantive instructional changes inherent in it, the issues associated with educating students at risk of dropping out, and the construction of the academy curriculum. School experience with similar programs did not, however, predict academy success. Perhaps not the least of the reasons was that resources generally were not used to prepare school staff for implementing the program.

Several schools already had other school-within-school programs and other career academy programs in place (Table 6.3). Sometimes "magnet" and "academy" are two different names given to very similar programs. We use the term "magnet" to describe programs that share some of the characteristics of academies, offering students more intense coursework in a specific area and often offering business partnerships involving on-the-job experiences. In

contrast with an academy, the students and teachers in a magnet program generally do not form a team, academic and vocational instruction are not integrated, staff do not meet during a common planning time, and while students may have more class time devoted to the magnet focus, other classes are not block scheduled. Moreover, magnets were designed originally as a desegregation tool to draw students from throughout a district into a school and students are targeted for the magnets because of their interest in the magnet focus.

School experience with similar programs featuring an occupational focus and workplace experience did not necessarily help schools establish curriculum sequences or business partnerships for their JROTC Career Academies. School experience with similar programs was not transmitted to the leader of the new program. If the leader of the academy was not personally experienced in a similar program, implementation suffered. For example, academies floundered during the first year at three sites even though there were other academy programs at the sites. Contributing to the problems at one of these schools was the perception of the program as a military academy. At another school, staffing problems at the agency subcontracting the direction of the academy program led to a leadership gap, breakdowns in the continuity of program development, and slowed progress of implementation. The third school was also struggling with its existing academy and had difficulty restricting itself to a specific career area for the JROTC academy. At two other sites whose academy coordinators themselves had experience in setting-up a magnet-like program, the academy got off to a good start.

Table 6.3

Experience with Similar Programs

Site	Magnet Programs	Academy Programs
Buffalo	6 technical programs	
Charlotte		Finance; medical sciences
Hollywood	Performing arts	
Locke	Perkins (dental focus)	Transportation
Louisville	Aviation	
Philadelphia	Academic motivation; business; community development	Automotive; hotel, restaurant, and tourism

Summary of Local Context Findings

- School budget pressures made districts wary of forward-funding the needed staff, materials, or remodeling necessary to implement the program, or of

taking on requirements they would have to support after federal resources were withdrawn.

- Districts were reluctant to authorize the use of federal program funds without specific federal guidelines.
- The timing of federal funds and difficulties in finding and hiring retired military staff contributed to delays in program planning and execution.
- State high-stakes tests and other reform practices shaped the program development and the composition of some academies.
- Principals made the final decisions on how to integrate the JROTC Career Academies into their schools. In some cases this meant compromising the career academy model.
- Districts' assistance for procurement of equipment, renovations, staff recruitment, and program development was rarely sought. Schools preferred managing their own programs.
- The principal's support for the academy was a crucial factor influencing success in implementing the academy framework.
- Disruptions in the continuity of leadership, when they occurred, caused implementation to suffer. When experienced educators were appointed to lead academies, implementation progressed more smoothly.
- In schools in which the academy coordinator was experienced in programs similar to the career academy, program implementation progressed more smoothly. School experience in similar programs was not successfully transmitted to new academy leaders.

Implementation Processes

The decisions the schools made about teacher recruitment, integrating JROTC staff, preparing teachers for the multiple challenges of potential dropouts, an integrated curriculum, a new educational setting, selecting appropriate students, and using the academy resources all influenced the nature of the academies and their development. Academy responses to these issues varied greatly.

Teacher Hiring Practices

Even though there was little formal need for additional teachers to staff the career academies, teacher hiring policies slowed development of the academies in five out of nine locations, as districts worked to integrate retired military personnel into their school systems. The DoD offered to reimburse districts for

up to 10 additional retired military personnel for each academy for the first five years of the program. The districts initially had planned to hire these additional retired military personnel into teaching positions, but soon found that most of them did not meet state teacher certification requirements. This was a greater problem for sites that planned to use retired military to teach academic classes than for those that planned to use them as vocational instructors, because certification requirements for vocational instructors tended to be less stringent. Sites responded by using existing faculty while recruiting more specialized retired military personnel for vocational instruction. However, the time lost in faculty recruitment often meant that the full academy team was not assembled until just before the start of the 1993–94 school year, with staff at some sites continuing to be hired well into the school year.

Hiring procedures for retired military personnel were confused in several sites, and, in three sites, retired military personnel either worked without pay for months because of breakdowns in the system or resigned in frustration. Retired military personnel who served as academy coordinators also generally had some trouble navigating unfamiliar district procedures for hiring staff and procuring equipment. In most cases, the complications that caused these problems seemed to be within the school districts rather than at DoD. However, district administrators were often unclear as to how many retired military personnel could be hired, what jobs they could fill, which of the military services could be tapped, and how these staff would fit into state teacher requirements. Many of these issues had never arisen with traditional JROTC programs, which meant that new policies had to be developed as issues arose, and these policies had to be developed in concert with federal representatives.

One site required that all retired military personnel complete a teaching credential, counseling, or administrative credential and made arrangements for a local college to hold classes on the high school campus. Other districts, however, did not develop long-range requirements for retired military personnel, making problematic their future placement in teaching positions after the end of federal support. One district intended to use retired military personnel as teaching assistants, but discovered that they did not qualify under district hiring rules for even that level of classroom responsibility. To solve the problem, the district hired the retired military personnel into newly created positions titled "instructional partners," and assigned them to classrooms with certified teachers. Other districts later picked up on this idea.

Union rules proved to be an obstacle at two locations. At one site, the principal hired a retired military officer to be the academy's coordinator. Both the principal and the coordinator were promptly named in a complaint filed by the

union over teacher seniority rules. The officer moved to another academy at the end of the year. At another site, union regulations required that the position of academy coordinator be posted and filled based on seniority. The individual who was named to the position later recognized that he was not "right" for the position and stepped down so another could be appointed. One district had residency rules that required city employees to live within the city limits, and a retired military instructor who failed to meet the requirement eventually left.

Staff Preparation

The reforms in instructional practice envisioned for the academy program require teachers to alter their behaviors (see Stern, Raby, and Dayton, 1992), but lacking substantial staff development, teachers were unprepared to do so. First, the integration of vocational and academic instruction requires teachers figuratively to step outside of their classrooms to understand how their academic discipline relates or can relate to a concrete occupational construct. They need to be familiar with the vocational content of the program and the workplace experiences students will encounter. For example, what is the role of social studies in aviation? How does one teach American civilization connected to aviation? What aviation principles rely on mathematics? Second, it requires teachers to work as a team, as opposed to being independent agents behind closed classroom doors, because integration requires a planned collaborative effort. Traditional instructional topics need to be reviewed for relevance to the academy curriculum and instructional time needs to be reallocated to accommodate new course content. Third, cross-cutting projects that unify the academy team and provide real-world related instructional activities drawing on several disciplines require extended class periods, collaboration between teachers, and a "coaching" rather than didactic approach to students.

None of the schools devised and implemented a comprehensive program to acquaint teachers with the academy model, with the special needs of target students, and with the curricular demands of the program. Several schools did organize staff development relating to one feature of the academy. One school, for example, sponsored a schoolwide workshop on working with at-risk students that academy teachers attended. Another school held a workshop on the school-within-a-school approach to organizing a school. And one school undertook staff development on technical-preparatory programs.

From teacher focus groups at the end of the first year of operation, it was apparent at most sites that teachers had little familiarity with the academy model. They could neither cite nor define its components, and when these were

described for them, it was clear that most components were not yet implemented in their schools.

Four academies spent time on curriculum planning and development during the summer of 1993 prior to their first semester of enrolling students. At one site, the initial vocational class was planned and later implemented. At two other sites, completion of the curriculum development and integration was left to each individual teacher, with limited results. Unfortunately, extensive planning at the fourth site was not carried through to fruition during the subsequent school year as a result of lack of leadership, lack of equipment and materials, and competing demands to satisfy state bilingual mandates.

Long-range planning and curriculum development were typically set aside to be done after the first year of operation. During that summer, staff from five academies attended curriculum development workshops focused on planning for the year ahead. Only one academy developed a specific curriculum that encompassed a four-year program, and that was an outgrowth of a preexisting course sequence at the school.

During the second year, at only one school were teachers given specific instruction about the vocational content of their academy; otherwise, the integration that occurred was usually the result of ad hoc exchanges between teachers. Several academies attended workshops sponsored by the National Center for Research in Vocational Education (NCRVE) involving curriculum integration, but there was little follow-through once teachers were back at their schools. Lack of intensive change in instructional practices is a common occurrence among similar reforms. Fullan (1993) cites several studies of reform programs similar to the academy that found such changes quite rare. Summarizing the findings of, for example, the New Futures Initiative (a $40 million reform effort in four cities), Fullan quotes the project's three-year interim report:

> "New Futures did not produce promising changes in the substantive content that students learn. It stimulated almost no fundamental change in the primary intellectual activities . . . in schools" (Whelage, Smith, and Lipman, 1992, p. 73).

Summarizing Taylor and Teddlie's (1992) description of a district acclaimed for its restructuring reforms, Fullan reports that "substantive changes in pedagogy (teaching strategies and assessment), and in the way teachers worked together on instructional matters proved to be elusive."

Finally, the special needs of at-risk students posed a challenge to the academy team and particularly for the retired military personnel. For most officers, their

military experience was with high school graduates who were eager to participate in instructional programs that they themselves had selected (i.e., volunteers in military service), rather than students who were often reluctant to be in school and saw little value in the instruction they were receiving. Schools did not take advantage of experienced JROTC staff to help them design the guidance that newly hired retired military personnel might need in dealing with high school students. Their academic and vocational daily teaching assignments and the removed location of the JROTC classrooms (typically in a basement or across the gym field) aligned newly hired retired military personnel more with regular faculty than with JROTC instructors. A good deal of their first semester was devoted to acquiring class management skills and developing the routines and procedures that experienced teachers rely on to manage their classes. Moreover, hiring practices brought many of the newly hired retired military personnel on board just before the start of school or even during the semester, and they struggled to keep ahead of the students. As we noted in Section 5, at most sites teacher common planning time was devoted primarily to the issues of class management and student behavioral issues. As the academy progressed, on-the-job training and team meetings provided the retired military personnel with pertinent experience in classroom management.

Student Selection

Academies based on the Philadelphia/California model are meant to target students at risk of dropping out of school who express interest both in the academy program and in improving their performance. They are not designed to address the needs of students with severe attendance or behavior problems who are uninterested in changing their lives. However, as already noted, several districts perceived JROTC Career Academies as military academies and saw them as a solution for problem students—a place where students would receive appropriate discipline.

Only one school set specific criteria for student selection. In two sites, many of the academy students were referred to the academy by the juvenile justice system; these were "high-risk" not "at-risk" students. Counselors or other district personnel sometimes assigned students to the academies without consulting the students themselves. Other schools used combinations of attendance and achievement information, counselor recommendations, and parent or student interest. At several schools, counselors programmed students into the academy for scheduling convenience, or because of students' interest in one aspect of the program—its vocational focus or JROTC.

As a result, during the first year, some students entered the program unaware of the commitments they were making, particularly to the JROTC component. In focus groups, they expressed resentment about requirements to wear a uniform one day a week, and sometimes about the vocational component, and frequently left the program at the end of the year. Attrition among first-year students averaged 50 percent and at two sites approached two-thirds.

By the program's second year, however, academy staff had more control over the recruitment and selection process. They were much more explicit about the program content in their recruiting efforts, both at feeder schools and at their own high schools. Students and their parents were often required to sign contracts clearly describing the academy program and student responsibilities. Students entering the program in the second year reported that they were familiar with the JROTC requirements and the vocational focus.

Resource Allocation

Funding for the program flowed from two sources—DoED provided a total of one million dollars for each of the first three years, and DoD funded up to 10 retired military personnel at each school for each of the first five years of operation. During the first three years, each academy received more than a half million dollars:[1] $119,000 in March 1993 for a planning year; $200,000 in October 1993 for the first year of operation; and $200,000 in July 1994 for the second year of operation. Districts were free to spend these funds as they saw fit to support their academies and to retain unspent funds from year to year. They were encouraged to spread out their expenditures to ensure program sustainment.

The amount of support given to academies compares favorably to the amount given to California and Philadelphia career academies. California academies receive a $15,000 planning grant, a maximum of $67,500 the first year (based on 30 students), a maximum of $90,000 the second year (based on 60 students), and then up to $67,500 each subsequent year. Philadelphia High School Academies, Inc., estimates a requirement of approximately $60,000 in start-up funds and $50,000–$75,000 to maintain an academy with branches at several sites, each serving 180–230 students.

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[1]Buffalo and Philadelphia received reduced amounts the first year, since they had postponed academy start-up for a year. Their total funding was increased subsequently to bring them in-line with the other sites. The initial grant to Louisville was for $139,000. The amount was based on the original program description submission and the needs contained therein.

The academies reported their grant expenditures using eight categories:

- Salary and benefits: salaries for classroom teachers and administrative activities paid out of grant funds (not including JROTC salary reimbursements).
- Facilities: renovations and purchase of new furniture.
- Equipment and supplies: e.g., computers, flight simulators, textbooks, and smaller classroom supplies.
- Program and staff development: including conferences, recruitment, meetings and workshops, consultants, professional memberships.
- Activities: e.g., field trips and parent activities.
- Travel.
- Utilities: electricity, water, and phone.
- Overhead: any overhead paid out of the grant to the school district or private group working with the academy.

Table 6.4 shows how the academies spent their grant funds during the planning year and first year of academy operation. Buying the equipment necessary to support their programs (i.e., computers, software, professional audio and video recording equipment, aircraft repair tools, etc.) understandably captured the lion's share of resources for most of the academies. Only three sites spent sizable amounts on program and staff development, and all but one spent more on facilities, equipment, and supplies combined than on program and staff development.

Two sites spent a third or more of their grant funds to pay salaries for academy teachers, supplanting rather than supplementing district funds for teaching staff at the school. In these two sites, all of the academy teachers were paid out of grant funds or supported by DoD as retired military personnel. At the very least, this portends one of two outcomes. First, at the end of federal funding these teachers would lose their jobs and the academies would lose the teachers who have developed experience in running an academy. Or second, the support for some or all of these teachers would need to be continued with district funds or grants.

These figures suggest that the district, school, and academy leadership paid more attention initially to arranging for facilities and equipment than to developing the instructional components of their programs, as we have already noted in Section 5.

Table 6.4

Percentage Allocation of Expenditures by Academies During the Planning Year and the First Year of Operation

	Slry./ Bnft.	Facil.	Equip./ Suppl.	Prog./ Staff Dev.	Activi- ties	Travel	Util.	Over- head
Buffalo		1.7	34.7	63.2	0.4			
Charlotte[a]	0.4	4.7	90.6	4.3				
Dayton	31.5	4.9	54.9	3.8	3.1	1.9		
Indianapolis	33.3	12.2	53.8	0.4		0.3		
Hollywood	22.3	16.4	21.9	28.5	1.3	0.5	0.4	8.7
Locke		17.0	50.6	27.8	0.6	1.3	1.1	1.7
Louisville	44.2	2.2	48.2	4.8	0.1	0.4		
Philadelphia			65.2	5.8	4.6	9.2	0.5	14.7
Washington, D.C.		20.5	71.3	4.4	0.2			3.6
Overall	16.2	8.2	54.4	16.6	1.0	1.2	0.2	2.3

SOURCE: Calculated from data supplied by academies.

[a]Assessment for Charlotte is conducted separately for the middle school and the high school. Each school's performance is considered as half of the site score.

Summary of Findings Regarding Teacher Hiring

- The unexpected unavailability of qualified retired military personnel for certified classroom teachers slowed teacher recruitment for academies and delayed academy planning and program implementation.
- Districts were creative in working within teacher certification rules to bring retired military personnel into classrooms, but in some cases payment to retired military personnel was slow to be received, and some found union regulations to be barriers to hiring.

Summary of Findings Regarding Teacher Preparation

- The general lack of staff development hindered teachers' attempts to develop new curricula and to adopt the changed roles they would play as a team of teachers within the career academy.
- Teachers were rarely adequately supported for the innovations in instructional practices inherent in an academy approach.
- Retired military personnel were unprepared for the academic and behavioral level of the academy students. Schools did not provide training before the start of the program or draw on the experience of JROTC staff to guide newly hired retired military personnel in acclimating to the school culture.

Summary of Finding Regarding Student Selection and Recruitment

- Academies set few criteria for selecting students. First-year students were frequently unclear about program components or goals. At several sites, initial confusion about the military aspect of the program led to the enrollment of high-risk students needing extensive attention and to a high turnover of students in the first cohort.

Summary of Findings Regarding Resources

- Almost all academies opted to spend far more on equipment and supplies than on program and staff development activities. Overall, more than half of the total funds was spent on equipment.
- Two academies used federal support to pay for all of their academy teachers, leaving their ongoing support in question when federal funding ends.

Summary

Implementation of the JROTC Career Academy program was affected by the complexity of the reform being undertaken, the context in which it occurred, and local strategies to operationalize the program. Sponsors recognized that local adaptation was bound to occur and supported local flexibility; however, initial agreements lacked formal accountability measures that would provide more direction to the implementation and ensure fundamental fidelity to the academy model. Further confounding the program goals was the latitude incorporated into the initial solicitation to districts. Most of the initial school programs bore more resemblance to traditional vocational programs or military academies than to career academies. Misconceptions about the nature of the program continued to affect academy designs well into the second year of implementation.

Local pressures including budgetary constraints and competing reforms slowed the academies' start-up. Districts were reluctant to release funds for equipment, renovations, and materials. State or district reform mandates took precedence over academy instructional practices.

Staff capacity to implement a complex reform varied, as did the commitment and ability of school leaders. Particularly problematic were the retired military officers serving as academy directors. Although dedicated and hardworking, they had little experience negotiating district policies for expending funds and hiring staff, and little experience in establishing an innovative academic

program. Their strengths lay in organizational rather than instructional practice areas. This may explain to some extent why the academy structural elements were undertaken before the instructional elements.

Staff came on board often just before the start of school, and little investment was made in training teachers to develop an academy program, deal with at-risk students, or integrate academic and vocational curricula. When teachers did attend workshops to assist their academy planning and development activities, leadership was frequently lacking to follow through when staff returned to their own school. Moreover, staff were often reluctant to engage in new instructional practices or adopt new content. JROTC instructors, too, were often reluctant to move from traditional JROTC curricula to instruction more integrated with other academy staff. Newly hired retired military personnel found themselves faced with discipline problems and class management difficulties far removed from the instructional situations they had encountered while in the military. Generally, they gained skills in managing high school students through "on-the-job" training.

As is often the case with the implementation of a new program, some disorganization took place in recruiting the first cohort of students. Some counselors saw the program as providing military discipline advantageous to students with serious behavior and achievement problems and at high risk of dropping out. Students were sometimes recruited late because program staff were not assembled. And students were on occasion unclear about the program activities, in part because they received inadequate counseling and in part because program plans were not sufficiently developed. Some students entered the program without an accurate idea of the vocational focus or the JROTC requirement. All of these factors led to relatively high attrition at the end of the first year.

Resources for the academies were generous, and local sites were given freedom in how to spend the money and how many retired military personnel to employ. Understandably, most of the funds were spent on equipment and renovations, but regrettably the investment in staff development was minimal. And some academies expended their funds in teacher salaries rather than use standard district funding.

Yet, despite the initial problems with the leadership, capacity, and will to institute innovative changes in instructional practices in the early stages of academy implementation, as well as the lack of incentives for schools to comply with the full academy model, the JROTC Career Academy programs established

a strong sense of identity among academy students and staff, and provided more attention to students' successful achievement and behavior.

7. Conclusions and Recommendations

We undertook this study to assess the progress schools made in implementing JROTC Career Academies, to identify the contextual factors that facilitated or hindered progress, and to identify actions that the program's sponsors could take to foster implementation and ease expansion to other schools. We reached several conclusions and present them here, along with recommendations that flow from them. We believe these represent a concise picture of how the academies fared in their first two years, together with our recommendations of what could be done in the future to assist other schools implementing this and similar programs.

Conclusion One: The JROTC Career Academies Made Fair Progress Toward Implementation of the Model

The JROTC Career Academies had some success in implementing those components of the career academy model that create a "school-within-a-school" structure. They developed distinct identities, and students at all sites reported receiving more attention to their behavior and academic achievement than they had in previous school settings. The academies attained their identities based on structural changes. Teams of teachers and students were established, classes limited primarily to academy students existed at all sites, and most sites had several academy classes scheduled back to back, keeping academy students together for part of the day. The academies were also able to limit student-teacher ratios, provide common planning time for teachers, and establish advisory boards with business partners. As expected from the results of previous research (e.g., Berman et al., 1977) the implementation process was characterized by varying degrees of adaptation between the innovation and the local institutional setting. Implementation was strongly related to the social, political, and economic contexts in which the programs were located.

Reforms take time to implement (cf. Purnell and Hill, 1992). In addition to scaling the hurdles associated with local school politics, the built-up inertia that exists in any organization takes time to overcome. As a result, it is not fair to reform advocates or to schools to rush to judgment about the extent to which a reform program is either viable or efficacious. However, accountability for

progress toward implementation goals must be established. We recommend the following:

1. Schools should be given several years to implement a major reform program before judgments are made regarding program effectiveness.
2. Accountability mechanisms that include annual or semiannual reports of activities and program monitoring to measure progress should be an implementation requirement.

Conclusion Two: Reforms in Instructional Practices Developed More Slowly Than Structural Reforms

Few sites developed the full educational program integral to the career academy model. Academies lacked specific educational goals and a sequence of courses and activities to achieve those goals, integrated academic and vocational curriculum, and business partners engaged in the academy development team.

Several studies of the integration of academic and vocational education indicate that even though districts try to facilitate integration, typically little actually occurs (see, for example, Boesel, Rahn, and Deich, 1994; Kemple and Rock, 1996; Tokarska et al., 1992), and it remains an ongoing challenge even in established programs.

In their study of the implementation of 10 academies Kemple and Rock (1996, pp. 45 and 51) stated,

> the extent to which teachers actually collaborate and change curriculum content and instructional strategies depends on their willingness to work together and to give up traditional aspects of the conventional disciplines. . . . perhaps the most crucial factor that influences the extent of curriculum integration and curriculum alignment is the amount and quality of shared planning time for teachers.

Our own data suggest that integration increases as academies continue to develop.

In the JROTC Career Academies, most sites provided enough shared time to manage and administer the academy but not enough time to plan and develop the curriculum that would underpin it. In addition, few sites provided the in-service training necessary to support and guide teachers in planning and developing curriculum materials. Even in sites receiving extensive training, local conditions and/or teacher resistance militated against curricular changes. We make the following recommendations:

3. Administrators and teachers who are engaged in implementing career academies should be provided time for planning and developing the curriculum materials to support the program as part of the implementation process.
4. Staff should receive training to understand the goals and design of career academies. They also need training in details associated with developing academies—for example, in methods of integrating academic and vocational curricula.
5. Career academies should join emerging networks of career academy programs to share curriculum development plans and activities to take advantage of similar efforts in other locations.

Conclusion Three: School Leadership Played a Major Role in Successful Implementation

While many contextual variables affected implementation of the JROTC Career Academies, in our estimation none did so strongly as the characteristics and continuity of leadership. Successful academies needed principals who were committed to the program and, while not necessarily highly active in its implementation, facilitated the administrative and developmental details necessary to establish this complex reform. Moreover, successful academy directors needed to be skilled educators experienced in implementing a comprehensive reform program.

In several sites, retired military professionals were charged with leading the program and brought extensive experience in leadership, commitment, and perseverance to the task. But what they did not have was familiarity with the local educational systems nor experience in developing educational programs. And this created difficulties for them. As Leighton (1996) noted,

> effective reform leaders know how the system works and they can take a lot of flak (if they must). They know how to interact with the central office, the local community, and others outside the school.

There is an additional important component of leadership that we found lacking in several sites, and that was continuity. Because career academies take several years to develop, it is especially important that there be continuity of leadership with clear lines of authority and responsibility. This does not necessarily mean that the same principal and academy team have to remain in place until implementation is complete, only that new leaders should not be brought in

unless their commitment to the program is assured and their roles are consistent with those of previous leaders. Our recommendations are as follows:

6. Schools should be identified as sites for implementation only if the principal commits to ownership of the career academy program.
7. Career academy program development and leadership should reside with experienced high school educators.
8. Districts should commit to maintaining stability in leadership for the first several years of program implementation. New leaders should not be brought into a school without a prior commitment from them to support ongoing reform efforts.

Conclusion Four: Lack of Formal Agreements Between the Program's Sponsors and the School Districts and Between the Districts and the Schools Hindered Implementation from the Outset

We have previously noted that in their desire to implement the JROTC Career Academies quickly and facilitate the academies' responsiveness to local conditions, the sponsors overlooked the need to lay the formal groundwork that would support their goals. As a result, time was spent explaining the program to the schools and encouraging them to follow it while they were engaged in implementing it. There was also little planning done to ensure compliance with the sponsors' goals through the development of a formal accountability mechanism. While written agreements between schools and DoD were eventually developed, there were no formal conditions specified at the outset of the program. Walking the line between offering inducements to implement a program while encouraging local flexibility and retaining fidelity to program goals requires carefully structured accountability mechanisms. The policy instrument chosen to implement the JROTC Career Academies was weak because the inducements were offered with initially unclear guidelines defining the program and no requirements for reporting on the progress of implementation. As programs developed, sponsors had little leverage to encourage fidelity to the program model. We reiterate here the importance of formal agreements in easing the process of implementation:

9. Program sponsors should draft formal agreements with district and school officials that specify the program's goals and design elements before implementation.

10. Program sponsors and district and school officials should develop written standards for implementation and an agreed-upon mechanism for accountability in implementation.

Conclusion Five: Lack of Expenditure Guidelines Hindered Long-Term Program Sustainment

The JROTC Career Academies received substantial resources both in cash and subsidized personnel. From the outset, sites were informed that they were expected to be self-sustaining after five years. Ideally, program expenditures should reflect long-term investments such as renovations, equipment, and staff development that will build a foundation for future operation. Again, in the interests of local control and flexibility, allocation of resources was left to each site's discretion. Few sites spent substantial funds on staff development to improve teachers' expertise in establishing an academy, dealing with at-risk students, and integrating vocational and JROTC coursework into their curricula. Several academies used their resources primarily for staff salaries, forgoing normal district responsibilities for teacher support.

11. Guidelines for resource allocation should stress the long-term nature of program operation and lay the groundwork for sustaining the program.
12. District participation should include commitments for sustaining successful programs.

Appendix

A. Profiles of Participating Districts and Schools

Conditions in the school districts and in the host schools themselves set the stage for the implementation of the academies. The following descriptions of the academy sites summarize the often bleak local contexts in which the academies operate, how the program came to be adopted, and the initial conception of the academy. Sources for the descriptions include the original letters of intent and revised program plans (June 1992 and February 1993, respectively), materials supplied by the districts and schools, articles in the local and national media, and information from interviews conducted with district and school representatives.

Seneca Vocational High School—Buffalo, NY

Buffalo is a historically blue-collar community, dependent upon the steel industry and heavy manufacturing. Recently it has begun to turn toward high-technology service jobs. Seneca Vocational High School seeks to serve the community by offering vocational programs in electrical and machine trades and in modern technology. The school prepares students with intensive vocational training in one of six areas: CAD/CAM robotics, satellite communications, drafting, electrical/electronics, machine technology, and building management technology. In addition, academic requirements exceed New York State graduation requirements. Students take at least three years of math, four years of English, three years of science, and four years of social studies. Ninety-seven percent of students graduating Seneca continue to pursue postsecondary education, enter military service, or have jobs. Of its 1990 graduating class, 25 percent enrolled in a four-year college, 42 percent enrolled in a two-year college or trade school program, 16 percent entered military service, and 14 percent were employed.

Seneca is atypical of the schools selected for the JROTC Career Academy program because of its high attendance rate, high graduation rate, and low dropout rate. Its principal actively sought the academy program to enhance the school's existing vocational offerings, and he was involved in the program's development from its inception. The original letter of intent cites as a benefit of program participation, the augmentation of technical skills with citizenship

instruction and the additional equipment that would be available for the program through the JROTC Career Academy. Their original plan was to link JROTC with their existing vocational programs and to block-schedule academy students. In the revised proposal, all of the components of an academy were present.

Seneca enrolls approximately 900 students from all areas of the city through a citywide application process. Students must apply to Seneca and are accepted based on grades, attendance, deportment, and counselors' recommendations. While the percentage of students participating in the federal free or reduced-price lunch program exceeds the district average, student attendance also exceeds the district average. Over half of Seneca's students are classified as minority; over half receive fully subsidized lunches.

At the time of its application to participate in the academy program, Seneca did not have a JROTC unit in place. During the 1993–94 school year, an Air Force JROTC program was established, and plans were laid for the academy to begin in the 1994–95 school year.

Eastway Middle School/Garringer High School—Charlotte, NC

Charlotte-Mecklenburg has the only JROTC Career Academy program that spans two different schools. Eastway Middle School serves seventh, eighth, and ninth graders and feeds students into Garringer High School for tenth grade. The district is in a period of transition, and there are plans to move the ninth grade from Eastway to Garringer High. For as long as the program bridges two schools, students will be shifted from one set of teachers at Eastway to another set at Garringer. The letter of intent was prepared by the district vocational office with substantial input from the JROTC instructor at Garringer who was charged with coordinating the project. Computer repair based on a U.S. Army training program was designated as the academy focus. Students were expected to wear uniforms daily, and retired military personnel were to fully staff the program. The conception clearly was one of a *military* academy with an Army-supplied computer-repair curriculum.

Both Eastway and Garringer have reputations for low academic standards and ineffective discipline. New principals were brought into both schools several years before the JROTC Career Academy program, and they are credited with clamping down on unruly student bodies. For the first year of career academy program implementation, both schools had new principals. As the principal of

Eastway noted, the JROTC Career Academy program is meant to be "a beacon of what this school can be." Both principals hope the program will positively affect the image of their schools.

Eastway students have a reputation for needing substantial additional support and guidance. In the 1991–92 school year, in-school suspensions declined but out-of-school suspensions increased by over 25 percent, indicating severe behavioral problems at the school. Eastway students struggle academically, too. Only 51.6 percent of 1990–91 Eastway students passed the state academic competency requirements. Eastway's retention rate in June 1991 was 26 percent. Fifty-nine percent of the students live with one parent or adult. Forty-two percent are eligible for free lunch, twice the district rate.

At Garringer High School, in-school suspensions rose over 50 percent from school year 1990–91 to 1991–92. Out-of-school suspensions were proportionately lower, but nearly doubled during the same period. Twenty-nine percent of students were absent over 18 days during the 1990–91 school year, almost three times the district absentee rate. Garringer's June 1991 retention rate was 21 percent. Garringer High is in many ways a mirror of Eastway Middle School. Forty-eight percent of its students live with one parent or adult.

Charlotte-Mecklenburg schools are in the middle of an extensive reform movement spearheaded by their superintendent. The blueprint for their reform was published in a document titled "The Charlotte Process: Reclaiming Our Legacy." The report summarizes 12 major recommendations that arose from a detailed examination conducted by the Charlotte community itself and a panel of 10 education experts during 1991–92. Improvement goals are established for each school and tied to a system of monetary rewards for the school and teachers. A report card published in November 1993 describes progress the school district had made during school year 1992–93. The report centers around scores on end-of-grade achievement tests in reading and math and state-required end-of-course tests in math, science, English, and social studies. Table A.1 summarizes these results for Eastway Middle School and the Charlotte-Mecklenburg School District. Eastway lags behind the district averages in all categories. Neither Eastway nor Garringer were improving at a sufficient rate to earn bonuses in the first year of reform.

Table A.1

Student Achievement Results, 1992–93
(in percentage)

	Eastway	District
End-of-Eighth-Grade Achievement Tests[a]		
Reading	44.9	67.5
Math	53.8	70.1
End-of-Course Tests[a]		
Algebra 1	62.5	65.2
Geometry	65.7	68.3
English 9	53.1	66.9
Econ./political systems	49.7	63.8
Phy. science	48.4	60.6

SOURCE: "A Special Report on Charlotte-Mecklenburg Schools," *The Charlotte Observer*, November 11, 1993.

[a]Percentage of students showing mastery.

Grace A. Greene Vocational Center—Dayton, OH

Dayton is slowly recovering from the "rust belt" decline of the last several decades. Manufacturing is decreasing and high tech is moving in to replace it. Two-thirds of the students enrolled in Dayton schools are from low income families. Low test scores, violence, and poor attendance are major concerns in the community. Dayton public schools have the lowest attendance rate in the state of Ohio (84 percent). A new superintendent has the business community solidly behind him and is pushing for site-based school reforms. Student discipline is a primary concern of teachers, and the leadership and self-responsibility skills taught by the JROTC program make it well-received in Dayton.

Grace A. Greene is a vocational high school with graphics, construction, and business computer programs, but it also has been used as a place to send students who have not succeeded elsewhere in the district. Prior to the initiation of the JROTC Career Academy program, Greene housed a General Education Development (GED) certificate/vocational program focusing on woodshop and printing, enrolling overage underachievers (seventh and eighth graders who are generally over 16 years old, have poor attendance, and may be juvenile offenders, and/or teen parents). Grace A. Greene also had a nursery and a program for developing minimum employability skills in handicapped students. In addition to these programs, the principal administered a program for juvenile offenders and one for pregnant teenagers housed at another site. Students at Grace A. Greene are at high risk of dropping out. The norm at the school is that students are assigned to parole officers. Halls and classrooms are sparsely

populated. Less than half (43 percent) of the students attend daily. As one administrator remarked, Grace A. Greene is "a dumping ground for kids in a red light district." Seventy-six percent of students are African American and 27 percent are white.

The original academy plan highlights the military aspect of the program—e.g., requiring that students wear uniforms daily. District administrators view the program as a *military* academy that will instill discipline, responsibility, and self-esteem. The original plan relied on linking JROTC instruction with the school's traditional vocational areas and did not select a specific academy vocational focus. A revised plan indicated a wide-ranging consumer services/ entrepreneurship focus encompassing business, marketing, home economics, and trade and industrial occupations.

George Washington High School—Indianapolis, IN

While the economic status of the greater Indianapolis area is on the rise, in the central core that comprises the Indianapolis Public School (IPS) District, the tax base is declining, leading to a nine million dollar deficit; enrollments are declining, and an increasing percentage of students come from households of low socioeconomic status. Overall, 68 percent of the student population is at or below the poverty level. Thirty percent of IPS students qualify for free or reduced price lunches, and the district dropout rate is approximately 21 percent.

The "Select Schools" program was implemented in 1993 allowing students to attend any school within the district. This program has served to enhance the importance of magnet and other special programs. However, poor planning regarding student transportation and school racial balance led to chaos and to staff demoralization (and eventually the resignation of the superintendent). Declining enrollments also led to a politically charged effort to close several schools.

George Washington High School was one of the schools selected for potential closure.[1] It is the third oldest school in the district, the smallest school, and is in need of renovation. It is one of the few schools in the district without a magnet program and attracts low-achieving students. Because of low test scores, it has been battling to remove itself from state-imposed academic probation. George Washington draws from a lower socioeconomic group than most of the district. Approximately 65 percent of students at George Washington come from single-

[1]George Washington High School was closed at the end of the 1994–95 school year, and the academy was transferred to Arsenal Technical High School.

parent households, and approximately 75 percent of its students score below the national norm on standardized tests. Sixty-three percent of students are African American, and 36 percent are white.

The district saw the academy program as an opportunity to attract resources for a group who had not been successful in traditional programs. Washington High School's principal actively lobbied for the academy because the school lacked any magnet programs. The proposal was written by the district in conjunction with the Washington High School principal. It outlined a "Mind Body Academy" offering career exploration related to sports, health, parks, and recreation. No specific curriculum information was included in the original plan. A revised plan retained the name but changed the focus to aviation, leading to careers in aviation maintenance or flight science. According to the proposal, the academy was designed on a military academy model, with the director as commandant and all staff supported through JROTC. Students would be expected to wear uniforms daily, in part to offset clothing costs for their families.

Los Angeles, CA

Los Angeles is the second largest school district in the nation, serving over 600,000 students. The area has been beset by economic adversity, racial unrest, and the social service challenges of the largest immigrant population in the country. The end of the cold war had a devastating effect on the aerospace industry, a primary employer in California and particularly in Los Angeles, leaving the city and state leading the nation in unemployment. School district finances led not only to no raises for teachers, but cuts in previously negotiated salaries. In the early 1990s, teacher salaries were reduced by 7 to 10 percent. Racial tensions sparked by the Rodney King verdict flared into days of civil unrest in the spring of 1992. The JROTC Career Academy program was one avenue for the federal government to contribute to rebuilding Los Angeles.

The school district has divided its administration into several regions but retains a central bureaucracy for coordination of special programs, curriculum development, renovations, equipment and materials acquisitions, personnel, budgeting, maintenance, etc. Reform efforts focusing on shared decisionmaking were just getting under way at the inception of the program. Five academy-model programs are operating in the district, and there is a designated district academy coordinator to provide assistance to these academy programs.

Components of the academy model were not addressed in the original concept piece prepared by the district. The program was intended to link JROTC leadership training with existing school vocational programs or offerings at

Regional Occupational Program centers. After site visits by DoD and consultations with local JROTC administrators, the district asked Hollywood High School and Alain Locke High School to submit proposals as JROTC Career Academies.

Hollywood High School

Hollywood High is a largely immigrant school that has seen major changes in the ethnic mix of its students over the past several years. One administrator referred to the school as similar to Ellis Island. The student population, currently approximately 2,500, "depends on the part of the world where there is trouble." For example, Hollywood High has the largest Armenian population of any school outside of Armenia. The neighborhood is a frequent first stop for immigrants, which leads to a high turnover rate of students—"once established in our country they usually move away," notes the principal. Fifty-seven percent of the students speak Spanish, and 28 percent speak Armenian. Two-thirds of the students are classified as Limited English Proficient (LEP).

Academically, Hollywood compares poorly with other high schools in Los Angeles County. Ninety percent of Hollywood's 10th graders scored in the lowest two categories of math ability on the California Learning Assessment System (CLAS) test—approximately 10 percent more in these categories than schools with comparable demographic and socioeconomic characteristics. Over half of Hollywood's 10th graders scored in the lowest two categories for reading.

To address the needs of a diverse student body at risk of not remaining in school to graduate, Hollywood High's principal has attracted over two million dollars in resources including a Healthy Start collaborative program providing medical, counseling, social, recreation, legal, drug, and gang-prevention services. The school also houses a performing arts magnet. The JROTC Career Academy program fits well with school goals, getting business involved in the school and providing "connectedness" for students. Both the principal and academy director were involved in implementing the state's secondary instructional reforms, which advocate organizing schools into clusters of students based on common themes much like an academy model (see *Second to None*, California State Department of Education, Sacramento, 1992). Hollywood's plan included taking advantage of the maximum resources offered in JROTC support by using retired military personnel as administrative personnel to develop the academy program and as partners in regular classrooms to reduce the teacher-student ratio. The academy began with a business focus, but in reaction to their location

and the type of business partners they were attracting, they narrowed their focus to media communication technology.

Alain Locke High School

Locke is located in South Central Los Angeles, site of the recent civil unrest in 1992. The school is generally rundown and covered in graffiti. Everyone must pass through a guarded, steel-mesh door to enter the school, and classroom doors remain locked at all times. In contrast, the classrooms that we entered during our meetings and interviews were clean and orderly.

Slightly more than half of Locke's over 2,000 enrollment is Latino, with the remainder primarily African American. Transiency at the school (i.e., the number of students entering and leaving during a semester) is 87 percent—one of the highest rates in the district. Administrators report that students may come in and out of school several times during the year, e.g., some return to Mexico for the Christmas holidays to be with their families and do not come back to school until late in January. The school is struggling to achieve compliance with state bilingual mandates for its large group of limited English speaking students—approximately 25 percent of the student body. Scheduling for special programs like the academy is impeded by bilingual class scheduling requirements.

Academically, Locke compares poorly with average high schools in Los Angeles County. Over half of Locke's 10th graders scored in the lowest category of math ability on the CLAS test. Similar differences exist for reading and for writing skills.

Locke's letter of intent described a broad career focus incorporating music and commercial art. It was unclear how the two occupational fields would be coordinated and how instruction and a large staff would be integrated. Existing school partnerships with 20th Century Fox and the music industry spurred an entertainment focus. Locke, like Hollywood, expected to use retired military personnel teaming with regular classroom teachers. The school's exemplary Navy JROTC program was one of the reasons it was selected for the program.

Shawnee High School—Louisville, KY

The Jefferson County School District offers countywide open enrollment. That is, an eligible student living anywhere in the county can ask to attend any high school that he or she chooses, although many students attend their neighborhood school. The primary restriction on this freedom of choice is school-building

demographics, dictated by racial integration requirements (40 percent African American and 60 percent white). If leaving the home school or entering the school of choice would have a negative effect on the demographics of either school, the enrollment choice may be denied. In addition, the schools each have different entrance standards, although Shawnee accepts virtually all applicants. The schools in Jefferson County are responsible for their own budgets, giving the school principal substantial flexibility. Because of the open enrollment policy, all schools try to offer something special to attract students. As a result, all but one high school in the system has a magnet program.

Kentucky is also in the midst of a statewide reform effort to upgrade learning standards for students. Reforms include "a set of milestones to be incorporated into classroom instruction and curriculum and measured by the [state] assessment system" (*Kentucky's Learning Goals and Academic Expectations,* Kentucky Department of Education, Frankfort, Ky., July 1994, p. 1). Substantial monetary rewards are attached to schools' meeting their accountability index, and penalties for failure to perform may include external intervention in school management.

Shawnee High School is located near downtown Louisville, Kentucky. It is on the west side of town, an area of relatively lower socioeconomic status within the city. The neighborhood surrounding the school is largely African American, and residents have the second lowest per-capita income in the county. Shawnee students have the lowest achievement test scores in the district, and the second lowest average daily attendance (87 percent).

Prior to the start of the JROTC Career Academy, Shawnee was already a Jefferson County Public Schools Magnet Career Academy for aviation. Almost 40 percent of the student body is enrolled in the aviation magnet academy. All aviation academy 9th graders attend classes together, and teachers in the aviation academy have a common planning period; however, the student-teacher team is only in place for the freshman year. The aviation academy offers several choices of specialization including flight (private pilot certification) and travel and tourism—which encompasses customer service jobs such as airline ticket agent and travel agent. By special arrangement, the travel agency program is able to book reservations directly from the high school, and commissions from sales go toward supporting student programs.

Those students at Shawnee who are not in the aviation magnet program are grouped into an academic team. Students attend classes together for the 9th grade, and teachers share a common planning period. Shawnee's JROTC Career Academy plan outlined a one-year program to expand the existing aviation

academy through the development of an aircraft airframe and propulsion specialization; thus, the JROTC Career Academy would provide an additional team for the remaining Shawnee 9th graders.

West Philadelphia High School—Philadelphia, PA

High school career academies originated in Philadelphia 25 years ago, and the nonprofit organization Philadelphia High School Academies, Inc., subcontracts operation of the academies for the district. This arrangement is unique among the JROTC Career Academies and offers both expertise and continuity in a district facing severe challenges.

A major reform effort began in Philadelphia in 1988 with funding from the Pew Charitable Trusts. The School District of Philadelphia, in partnership with the Philadelphia High Schools Collaborative, initiated a high school restructuring effort focusing on school-based planning and the development of smaller educational units within large comprehensive high schools. A system of "charter programs," similar to academies, was also established in many high schools. Pew recently withdrew funding for this initiative, citing lack of progress.

Ongoing budget crises have caused years of spending cuts in the district—$91 million in 1993–94, $60 million in 1994–95, and $30 million out of the $1.3 billion 1995 budget. A 1993 early retirement option netted the loss of 3,000 staff from the school district, including the superintendent, deputy superintendent, and many other top administrators, leaving the schools with reduced institutional memory and the district with a management void shortly before the start of the 1993–94 school year. In early 1994, the state court found that racially isolated minority schools receive fewer resources and required the district to develop a more equitable improvement plan as a remedy. Later in the year, a court-appointed panel of experts indicted the district's operations, characterized them as depriving students by "an attitude of helplessness and resignation," and recommended far-reaching changes in programs, redistribution of resources, and central organization (as reported by Peter Schmidt, in "Phila. Leaders Join Call for Overhaul of Schools," *Education Week*, Vol. XIV, No. 4, September 28, 1994).

Philadelphia's original letter of intent did not describe proposed school programs; however, Philadelphia's experience with career academy programs was clear and well-known. Their initial letter requested assistance to strengthen an existing program and to establish two new academies focusing on aeronautics and aviation mechanics and marine technology and repair. Preliminary negotiations targeted two academies, one to expand an existing business charter program at Germantown High School, and another to develop a marine/aviation

academy at West Philadelphia High School. Germantown had no JROTC program and needed a year to establish a JROTC. West Philadelphia High School had an Air Force JROTC program already in operation. Program initiation at both schools was targeted for September 1994 to permit the establishment of a JROTC unit at Germantown, student and staff recruitment, and program development.

Both schools were extremely hesitant about agreeing to mandatory enrollment in JROTC for academy students. They felt there would be considerable resistance on the part of students and parents. Because of uncertainties about implementing the requirements for participation in JROTC and about the program development, the program sponsors decided to fund the program at West Philadelphia High School and to postpone funding a Germantown High School academy until the program was later expanded to other additional schools across the country.

At West Philadelphia High School, the most crucial concern is the annual dropout rate. Over 40 percent of students drop out after the 9th grade. Average daily attendance is only 70 percent. The student body is 100 percent African American, and West Philadelphia High School is one of the "racially isolated minority schools" affected by the aforementioned suit. School administrators planned to counteract student disengagement by developing smaller organizational units within the school. Already established at West Philadelphia High are two other (non-JROTC) career academies operated by Philadelphia High School Academies, Inc. (PHSA, Inc.), and three charter schools (similar to career academies, but not supported by PHSA, Inc.). During the planning for the JROTC Career Academy, West Philadelphia High School had a different principal each year, but ongoing commitment to a school-within-the-school structure. PHSA, Inc., was responsible for the development of the academy at West Philadelphia. Eventually, the focus was narrowed to aviation. PHSA, Inc., established an advisory board and began to define the academy program content in conjunction with representatives from the district and the advisory board.

Phelps Career High School—Washington, D.C.

The unemployment rate among young people in the District of Columbia is approximately four times the national rate. Declining resources have prompted the school district to initiate a "right sizing" effort—shrinking central office staff, placing more management responsibilities in the schools, and reducing teaching staff. Along with increased site-based management, the district is promoting a series of reform initiatives that focus on performance outcomes for students,

public-private partnerships, thematic schools, and school-within-a-school charters. A district administrator characterized the JROTC Career Academy model as "right on time and right in line" to fit district and school goals. Phelps Career High School, with its long history of industrial arts training but traditional curriculum and limited technology, offered a site that the district thought would benefit from the academy model, the addition of the JROTC leadership component, and the infusion of new personnel and resources. Concurrently, the district was considering closing the school or merging it with a neighboring comprehensive high school.

One of six vocational high schools in the school district, Phelps is located in Ward 5 in the northeast section of Washington, D.C. Ward 5's population is 94 percent minority, and the median income is below the city median. At Phelps, the student body is 98 percent African American, the average grade point average is below a C grade, and the average daily attendance is 72 percent. Scores on the Comprehensive Tests of Basic Skills (*District of Columbia Public Schools Comprehensive Tests of Basic Skills Scores 1991–1992)* indicate that Phelps students are 30 or more percentile points below the national norm. In D.C. schools, approximately 61 percent of students are eligible for free or reduced-price lunches.

Washington's original plan was prepared by the district, with some input from the JROTC and Phelps staff. It linked JROTC and a traditional multifocus industrial arts program. Instruction was to be reinforced through a computerized learning system. A private education consulting firm devised the revised career academy plan. Using dual electronics and engineering design focuses suggested by the principal, the new plan incorporated the elements of an academy, although it did not outline a sequence of courses and activities to support the occupational focuses. The plan also called for a large teaching staff making extensive use of retired military personnel in teaching positions (four the first year and six the second year). A director for the academy was hired by the JROTC Washington–area administrator. The Phelps principal had little to do with the conceptualization of the program and was present only briefly at an initial visit by the program sponsors.

B. Implementation Progress by Component and Year

Table B.1 details the extent to which the components of the career academy model had been implemented by our nine sites at the end of the first and second years of operation. For each major component, its subcomponents are listed (e.g., occupational focus has three subcomponents). For each subcomponent, the table

Table B.1

Implementation Progress

	First Year (N = 9)		Second Year (N = 7)	
Component	Yes	No	Yes	No
School within a school				
Discrete unit	9	0	7	0
Core of classes	8	1	4.5 + .5 = some	2
Block scheduling				
At least 2 block scheduled classes	6	2	4.5	2.5
Innovative use of block scheduling	2 = some	7	.5 = some	6.5
Occupational focus				
Career area	6	3	2 + 2 = changing	3
Course sequence	1 + 2 = some	6	1 + 1 = some	5
Goals	0	9	0	7
Integration of academic and vocational education				
Academic–vocational ed. integra.	1	8	4.5	2.5
Cross cutting projects	2 + 1 = some	7	2	5
Common planning time				
Regular mtgs.—1/wk. minimum	6 + 1 = some	2	5	2
Mtgs. used for program planning	3	6	3 + 1 = some	3
Mtgs. used for admin./stud. progress	8	1	5	2
Reduced stud./teacher ratio				
Reduced class size	5	4	3.5 + 2 = some	1.5
Business partnerships				
Advisory council meets 2/yr.	2 + 1 = some	6	6	1
Bus. partners contribute	2 + 3 = some	4	5	2
Integration of JROTC				
JROTC coursework integrated	1 + 1 = some	7	1 = some	6
JROTC staff integrated	7	2	5.5	1.5

NOTES: Numbers in each cell refer to the number of sites. Shading represents responses by more than half of the academy sites. "Some" refers to some implementation progress in the area. "Changing" means changing the focus from one career field to another.

cells report the number of sites that had or had not implemented it by the end of their first and second year of operation. For example, nine sites had established discrete units by the end of their first year of operation, but two had not block-scheduled at least two academy classes by the end of their first year of operation. Shading of a cell represents implementation by half or more sites.

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